American Aviation

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EQUIPMENT

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1952

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Trends

Air Force and Navy say that manufacturers' claims that jet engines are good for 1,000 hours between overhauls aren't standing up in actual practice. One standard Navy engine, for example, is certified for 1,000 hours as the maximum time between overhauls, but is averaging 300 hours.

•

Indication that trend in military fighter planes is away from use of machine guns and toward greater use of missiles is seen in fact that two production aircraft, the North American F-86D and Lockheed F-94C, are coming off the lines with no guns whatever. Firepower consists of rockets alone.

•

Total of $739.5 million is slated for aircraft procurement in fiscal 1953 by eight European NATO nations and Germany. United Kingdom, Belgium-Luxembourg, Denmark, France, Italy Netherlands, Norway, Portugal and Germany will contribute $448 million, and Mutual Security Agency will provide the rest. By contrast, USAF alone has asked $6.5 billion for complete aircraft in fiscal 1953.

•

Realization of the nature and impact of the foreign lead in jet transport development and production on the part of a few informed Senators may influence favorable Senate action on the $1,400,000 prototype aircraft testing appropriations, eliminated by the House as part of an 18 million dollar cut in CAA's appropriation request.

•

Meeting of the Air Transport Association and airlines in Chicago to discuss the jet transport specifications represents one of the first tangible steps taken by the US scheduled airlines toward group action in this important field. Despite the long delay in group action, a number of airlines have been moving along with their own studies and plans.

•

A big question remains unanswered in mobilization plans (see page 13) for civil air carriers: who has the final say-so on whether a war situation is serious enough to militarize the airlines? No formal agreement has been reached within the government, and it's an important question which airlines want answered.

•

Phil Hollar, dollar-a-year man who's been serving as Acting Under Secretary of Commerce for Transportation, is expected to resign soon to return to private business. His departure will leave wide open the important post formerly held by D. W. Rentzel.

The Washington View

Military Air Budgets Slashed

Can the Navy and Air Force buy the same numbers of planes they had planned for fiscal 1953 even though the House Appropriations Committee has cut a total of $710 million requested for "aircraft and related procurement"?

In making the reduction the Committee said it did not want to reduce the number of aircraft but hoped that by "efficiencies and reductions in cost" the same planes would be available. The Air Force was slashed by $560 million for aircraft and related procurement; the Navy $150 million in the same category. The Army, however, was left untouched in its request for $36,107,000 for liaison planes and helicopters.

Total slash aviation-wise was $1,502,200,000 for the Air Force and $418 million for Naval aviation, including the $193 million for a second super aircraft carrier.

In a way, however, the two services let themselves in for the reductions. In earlier testimony before a Senate subcommittee, USAF Under Secretary R. L. Gilpatric admitted under questioning that as much as $3.5 of the $11 billion requested for aircraft and related procurement could be removed from the Air Force request **if Congress would grant equivalent contract authority.** Rear Adm. J. B. Moss, assistant chief of the Bureau of Aeronautics, also reluctantly admitted about 20-25% of the $3.5 billion requested for Navy aircraft and related procurement **could not be spent in fiscal 1953.**

Recommendations of the House Appropriations Committee make no mention of obligational authority to replace the cut in funds, although the missing money might well be restored either by the whole House or by the Senate when the bill reaches the upper chamber.

As things now stand, however, the reduction in funds proposed by the House Committee may be the first step toward a further stretchout of the aircraft program.

More C-46 Weight Cuts?

Even though the Aircoach Transport Association representing non-scheduled operators of the Curtiss-Wright C-46 has demonstrated that the plane theoretically is not as "critical" if one engine should fail during takeoff or landing as some critics contend, indications are that the Civil Aeronautics Board will not back down from its present decision to keep the plane at a gross operating weight of 45,000 pounds.

CAB recently reduced the legal maximum from 48,000 pounds but CAA has been contending that gross weight of the Commando should be reduced to 36,200 pounds. Decision on CAA's request will be coming up soon, but there seems little likelihood that CAB will go along with its sister agency all the way. There may well be a further reduction from the 45,000-pound figure, and it is almost a dead certainty that the former 48,000-pound figure will not be restored.

Aircoach Transport Association, of course, maintains that present maximums are crippling the non-skeds and will fight all CAA attempts to reduce them further.

Industry Steel Position Good

The steel strike will not endanger production by the aircraft industry for about four weeks, according to people in the know, because most aircraft manufacturers have the legal 60-day inventory of controlled materials and some have even more.

Best estimate is that it would take about four weeks for the metal industry to start delivering steel to aircraft firms after steel output gets going again. Some sources claim aircraft production would not suffer for possibly as long as six months as a result of high inventories, the stretchout in the aircraft program, inevitable government priorities to the industry, etc.

The Jinx Hits Jamaica

The sound and fury resulting from the crash of a U.S. Airlines C-46 cargo plane into the residential area of Jamaica near Idlewild Airport will signify nothing as far as closing of Idlewild and LaGuardia are concerned. Citizens committees undoubtedly will press for curtailment of operations at the two fields serving New York, but it will take nothing short of a minor revolution to get the Port of New York Authority and other agencies to close them up.

That fact stands out as more investigations get under way. But CAB officials have already reported that the pilot of the Curtiss-Wright Commando "apparently" did not follow instructions from the control tower. He was told to climb before trying a second landing approach and did not do so.

Ironically enough, the U.S. Airlines plane would have used Newark Airport for its landing had not the Newark base been closed down. At the time of the accident, visibility conditions at Newark were better than they were at Idlewild, according to CAB officials.

. . . Robert M. Loebelson

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When & Where

Apr. 21-24—Society of Automotive Engineers, Aeronautic, Aircraft Engineering Display & Technical Air Review, Statler Hotel, New York.

Apr. 22-23—Air Traffic Conference, semi-annual meeting, Atlanta, Ga.

May 8-9—Fifth Annual Wisconsin Aeronautics Conference, Green Bay, Wisconsin.

May 12-14—Institute of Radio Engineers, National Conference on Airborne Electronics, Dayton Biltmore Hotel, Dayton, Ohio.

May 14-16—Society for Experimental Stress Analysis, Spring Meeting, Lincoln Hotel, Indianapolis, Ind.

May 15-16—American Helicopter Society, 8th Annual Forum, Washington Hotel, Washington, D. C.

May 15-16—Southeastern Airport Managers' Assn., semi-annual meeting, Jacksonville, Fla.

May 17-18—National Pilots Air Meet and Races, Chattanooga, Tenn.

May 22-24—American Society for Quality Control, Sixth Annual Convention, Syracuse, N. Y.

June 1-6—Society of Automotive Engineers, Summer Meeting, Ambassador and Ritz-Carlton Hotels, Atlantic City, N. J.

June 9-21—International Organization for Standardization, Triennial Meeting, Columbia University, New York.

June 19-21—American Society of Mechanical Engineers, Applied Mechanics Division, Shock & Vibration Instrumentation Symposium, Pennsylvania State College.

International

Apr. 15-18—International Federation of Air Line Pilots Assns., annual convention, Sydney, Australia.

Apr. 28—IATA Warsaw Convention Special Committee, Bermuda.

Apr. 30—IATA Legal Committee, Bermuda.

May 5—IATA, Fifth Annual Technical Conference, Copenhagen, Denmark.

May 11—IATA Traffic Committee, 15th Meeting, Buenos Aires.

May 12—IATA Clearing House & Revenue Accounting Sub-Committee, Rome.

May 19—IATA, Technical Committee, Thirteenth Meeting, Copenhagen, Denmark.

May 27—ICAO, Sixth General Session, Montreal.

Letters

Letters should be addressed to The Editor, American Aviation Magazine, 1025 Vermont Ave., N.W., Washington 5, D. C. Anonymous letters will not be printed, but names will be withheld upon request.

Cuban Discourtesy

To the Editor:

I am taking the liberty of enclosing a copy of a letter addressed to the Cuban Secretary of State explaining in detail how they charge private pilots excessive landing fees and custom brokerage (these people do the work custom officials should do and charge exorbitant rates for filling out a few papers) when visiting Cuba.

I believe a little article in your magazine on exposing this legalized banditry would, perhaps, put an end to this extortion.

MILES FIRNHABER
Sealtite Insulation Mfg. Corp.
Waukesha, Wis.

Mr. Firnhaber's letter to the Cuban Secretary of State follows:

Dr. Aureliano Sanchez Arango
Ministro de Estado
La Habana, Cuba
Dear Sir:

The writer recently visited your country and I have been advised you are very interested in private aviation. The purpose of this letter is to bring to your attention some of the excessively high custom fees and brokerage charged private pilots. Below is a complete review of our visit to your country:

• **January 3, 1952:** I contacted Oscar R. Morales of the Cuban Consulate, Key West, who charged us $13.60 for a wire to the Minister of Defense and also for permission to fly to Rancho Boyeros in Havana. On arriving at Rancho Boyeros, we were charged $2.50 for a landing fee plus a brokerage of $12.50.

• **January 4, 1952: We spent the morning at the Ministerio de Communicaciones** and finally secured permission to fly over the island to our destination at Kingston, Jamaica. We received this from Dr. Mario Haedo Triana. This department was very cooperative and there was no charge for this permission.

• **January 4, 1952: We flew to Aeropuerto de Camaguey, Cuba.** The following morning the local customs official presented us with a bill for $10.00. We argued with Guillermo Delmonte. However he insisted on collecting fees, which he claimed were for overnight and to impress his point, he had a soldier with a sub-machine gun. Our party certainly took exception to this treatment. By this time we were so disappointed, we almost turned back.

• **We flew on to Kingston, Jamaica** and found our treatment in this British colony completely different from the unpleasant experience with your customs, brokers and soldiers in Cuba. The only fee we had to pay in Jamaica was our initial landing fee of $2.50. Their attitude was one of cooperation and courtesy.

A complete contrast with the arrogance we had just received in your country. Believe me, if the cruising range of my aircraft had been sufficient to avoid your country on our return trip, I certainly would have done so. On returning to Santiago we were charged an additional of $5.00 for a brokerage fee and $5.00 for a health certificate, also $2.50 for a taxicab fee for the two men to come to the airport. The two gentlemen's names were Dr. A. Fajardo Lora, Medico de Cuarentenas and Alberto Planas Manzano, Delegrado del Sr. Administrader de Aduan.

(The above letter was written on January 28, 1952. AMERICAN AVIATION queried Mr. Firnhaber in mid-March to find out what response, if any, he had received.

Mr. Firnhaber informed AMERICAN AVIATION: "I never even received the courtesy of a reply to my letter addressed to the Cuban Secretary of State.

"This is typical of the high-handed way they treat private pilots that enter their country. I believe if this was brought to the attention of the general public, their attitude might be improved, as in the English-controlled islands, such as the Bahamas and Jamaica, where you never are held up with these exorbitant fees."—Ed.)

Glowmeter Thanks

To the Editor:

On behalf of the corporation, I take this opportunity to thank you for the cut and material you published on our *Glowarning* eye-level system.

I would appreciate receiving six copies of AMERICAN AVIATION containing our article.

JOHN E. FITZGERALD
Public Relations
Glowmeter Corporation
Buffalo, New York

Behind the Setup

To The Editor:

Your organization has obviously been "taken" by the article entitled "What's Behind CAA's New Safety Setup," appearing in your March 3rd issue.

Being a CAA employee, it is naturally required that my comments be kept in confidence.

Your article has all the appearances of having been written by Mr. Hensley personally. As an overall picture I have no complaint about what he was attempting to accomplish and the procedures used would have been satisfactory provided the announced procedure had been handled fairly.

In your article it states "using detailed well publicized methods,—these jobs were opened to bids and successful candidates selected." Later on you say "without so much as submitting bids, all those (except medical) with ratings of GS-13 or higher were considered eligible." Obviously these statements conflict. Only the last statement is true. No one had any bid rights at all, as to position, location or anything else.

In the whole plan no consideration was given to the Regional Administrators and yet in some instances much of our trouble lies in those people.

The written exam was devoted almost entirely to technical business administration matters. For people trained in such work it was fine. For others it was grossly unfair and had only slight connection with the work performed by Aviation Safety people. Personnally, however, I found the written exam very challenging and worthwhile but very few of our group accepted it as fair.

The group and individual interviews were so handled and weighted in the final grade that the examiners could place an individual at any predetermined spot on the final eligibility list. This was the main item of dissatisfaction because the final result showed that some of our best people were entirely overlooked and some of those with little to offer in the way of ambition, character, experience, technical ability, initiative, etc. came out on top.

The pay off came when Mack Clark in Region 4 failed to be selected for any top job. But he was then promoted to an even bigger job as Asst. to the Administrator. The whole deal was badly "rigged." In the case of Region 5 personnel they were interviewed by their own Administrator with resultant high grades which resulted in the final selection of larger numbers of Region 5 people.

Our personnel policies in the past have admittedly been bad, with too much emphasis on seniority and not enough on ability. This was a grand opportunity to overcome our past mistakes but the whole opportunity was passed by and we proceeded exactly nowhere.

CAA EMPLOYEE

(• The article was, as indicated by the headline, a report on the reason for and handling of the reorganization. Since Hensley planned, directed, and carried out the change it would appear in order to reflect his reasons and thinking in such an account. On October 12, 1951, following various letters to employees noting the proposed change in Aviation Safety, all personnel in this branch were notified: "All employees in Grade GS-13 and higher in Aviation Safety, except Regional Medical Officers and medical personnel in the Washington Office, will be considered as outlined below and will not be required to submit bids."

No actual bids were filed, but the end result was the same. Everyone was advised of this arrangement, which simply made it unnecessary to fill out related papers, and 310 persons were interviewed.

• Regarding Mack Clark: Clark is no longer in CAA's Aviation Safety Organization. He has been assigned a job outside Aviation Safety as assistant to the Regional Administrator.

• L. W. Jurden, Region 5 Administrator, considered one of CAA's top men, was a member of one of the two three-man teams which interviewed applicants for the new positions. In letting Jurden interview men in his own region CAA

(Please turn to page 66)

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Editorial

Stitch in Time

THE OLD ADAGE about a stitch in time saving nine sums up appropriately the recent meeting between representatives of the Departments of Defense and Commerce and the civil air carriers looking toward formalizing a program to utilize the airlift ability of the air carriers in the event of war.

The plans are being made, this time, before the difficulties arise, not afterwards. Thanks to a few far-seeing leaders in industry and government, there has been a determination to avoid the errors made in mobilizing the airline resources in the early days of World War II.

by W. W. P.

Details of the civil reserve air fleet plan appear elsewhere in this issue, but basically the whole concept revolves around two rather firm conclusions.

One is that a high proportion of the nation's airlift capacity is represented by the civil airlines.

The other is that in the event of a war adequate civil air transportation must continue to be available quite apart from military airlift.

So two plans had to be worked out. One plan involves the turning over to the military effort of as many four-engined transport planes as can be spared, and the second plan concerns the fullest utilization of the remaining equipment in the maintenance of an air transport system for civilians, both in this country and overseas.

At the beginning of the last war there was no firm plan for utilization of the airlines' resources. Lacking an airlift fleet of its own, the military in effect "commandeered" a high proportion of the existing commercial fleet of airplanes. Large numbers of these planes were purchased by the military, but even on the balance of airplanes remaining in civilian operation the military exercised considerable direct control through operation of the priorities system.

Now under the plan just disclosed, the airline resources will be divided into two packages. One will work directly with the military. The other will continue the job of operating civilian services. This time, it is hoped, that the military will not control priorities for the civilian operations, although obviously there must be coordination.

Throughout the two-year period of study leading up to the new plan, there has been considerable harmony, the key being a working relationship between the Defense Department on the military side and the Commerce Department on the civilian. There might arise a situation under which all the airlines would have to be completely militarized, but short of a truly acute crisis the present plan of dividing the airline resources makes a great deal of sense.

At the start of World War II there were only DC-3's, valued at about $100,000 each. The air transport industry is quite different today, with an ever-growing fleet worth from $500,000 to $1,600,000 per airplane. Each major airline now has an investment of from $50 million to $100 million and has obligations to pay interest, to pay dividends on preferred stock, and to pay reasonable dividends to common stockholders.

Some way will have to be found to draw up a contract which is reasonable for the military services but at the same time is reasonable for the investors in the airlines. Merely paying the owner of an airplane ordinary depreciation charges plus a fair return on investment is insufficient today, due to the very substantial impairment of the earning capacity of the airlines by the taking away of a sizeable part of their personnel and aircraft fleet. A middle course will have to be found.

Another chore of some consequence is to draw up a map showing what routes and services can be continued during time of war. The best method would be to permit each carrier to retain a fair share of the business to which he had been accustomed in the pre-war period, but traffic requirements during wartime are different from peacetime, and some adjustments will necessarily have to be made.

Generally speaking, the civil reserve air fleet plan is a great step forward toward avoiding the mistakes of World War II. Those who have had something to do with the planning are to be commended. It isn't easy to maintain enthusiasm for advance planning for a war which might not happen. But the job has to be done.

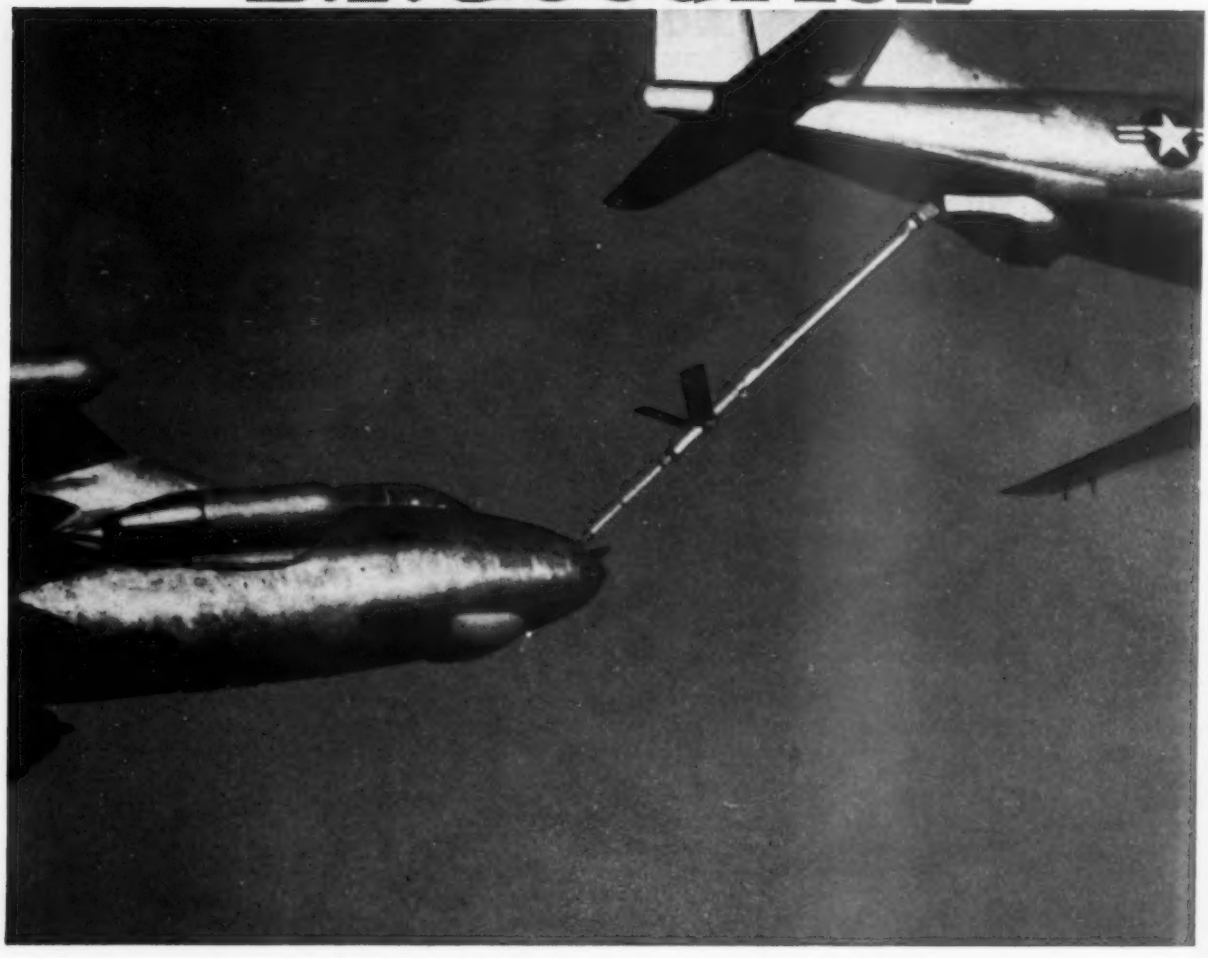
The CAA Smuggling Case

A New York newspaper recently published an expose, which was in turn reproduced in various quarters, to the effect that CAA personnel were engaged in smuggling rum and other liquor into the United States. The story was more smoke than fire. Apparently there have been nothing like the wholesale shipments reported. A few bottles and a few cases, all brought in as personal baggage by individuals.

Although nothing strictly illegal was involved, the story did reveal a few indiscretions and evidence of poor judgment on the part of some CAA personnel. Seeking or receiving favors, if even in the form of transporting a few bottles, is below the standard of ethics required of CAA people. The matter has been rectified and hardly seems worth the hysteria created in a few quarters by those who are inclined to leap before checking or thinking. Indiscretions are not major crimes, nor do a few instances call for a rabid indictment of an entire organization.

. . . WAYNE W. PARRISH

B.F.Goodrich



Rubber keeps ice out so flying boom can come in

WHEN the Flying Boom—Boeing's telescoping tube for mid-air refueling—delivers fuel to a plane in flight, it fits into a special opening in the receiving ship called an in-flight fueling receptacle.

In designing the receptacle, Boeing engineers faced a problem: if icing conditions while in flight should cause ice to form in the receptacle, it would choke up the opening, make it impossible for the boom to enter. Looking for the best way of keeping ice from forming, Boeing brought the problem to B. F. Goodrich.

It seemed like a job for electrically-heated rubber—thin, tough rubber heated by a core of electric resistance wires. But to put the heat where needed, the heated rubber would have to blanket most of the receptacle area—fit snugly over bulges, around complicated curves and corners. It was a tricky job.

B. F. Goodrich formed heated rubber into twelve molded sections which would fit together skin-tight over the contours of the receptacle. Put to the test, the sectional construction proved to be the answer. And heated rubber is now used on re-fueling receptacles for the B-47.

B. F. Goodrich heated rubber is a highly efficient way of providing spot anti-icing heat. It is flexible, saves weight, fits curves. Besides re-fueling receptacles, BFG heated rubber is doing a successful job on propellers, control surfaces, wings, air scoops, many other parts. It is a typical development of the BFG engineering and research that supplies aviation with the answers to tough problems. B. F. Goodrich products for aviation now include tires, wheels and brakes; heated rubber; De-Icers; pressure-sealing zippers; Avtrim; inflatable seals; fuel cells; accessories; Rivnuts. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F.Goodrich
FIRST IN RUBBER

This Is Security? . . . Seaplane Fighters . . . Sample Aircraft Costs . . . B-52 Refueling

THE SUBJECT of military security and what information should be released to the public has been fraught with so many inconsistencies that the Department of Defense could not rightly say that it has any security policy at all. Nowhere are these inconsistencies more apparent than in the annual Congressional hearings on the military appropriations bill, which are printed and made available to the press and public.

Each year Defense witnesses on Capitol Hill drop a couple of hundred "secrets," and each year these pieces of information are picked up by the press, to the great amazement and discomfiture of the Department of Defense. This year's hearings, just released, follow the usual pattern. They are just filled with little gems of information which will keep the Russian intelligence corps busy for months piecing them together.

In this year's printed hearings, Secretary of the Air Force Thomas K. Finletter said: "I think that the policy ought to be that we ought to tell the American people and the world the broad problems, but that we ought not to release any technical information at all." Later: "Nothing will be revealed that does not have to be revealed as a practical matter." No one can dispute that policy. *But*—a perusal of the two-thousand-odd pages of Air Force and Navy testimony which followed that statement reveals:

1) Air Force plans to refuel the Boeing B-52 jet bomber in flight.

2) Production timing of the B-52.

3) Confirmation of three new jet Air Force fighters, the designations of which the Pentagon would not previously discuss—the North American F-100, the McDonnell F-101, and the Convair F-102.

4) A discussion of the configuration of the Boeing KC-97 aerial tanker, pointing out for potential attacking aircraft the location of the fuel-storage tanks.

5) Disclosure of the existence, the designation, and the manufacturer of a radical new Navy design for a seaplane fighter (see below).

6) Disclosure of the existence of a brand new, hitherto unmentioned, Navy guided missile, the Chance Vought Regulus, a surface-to-surface weapon.

7) Re-mention of the Douglas Sparrow, an air-to-air missile, the inadvertent disclosure of which got the Navy very excited on "security" grounds less than a month ago.

8) Discussion of production plans for both the above missiles plus a third, the Convair Terrier, which had been announced.

It should be obvious that the Department of Defense, before loosing any more blasts at "irresponsible" security violators, should tidy up its own house.

Seaplane Fighter Interest Grows

The Navy's plans to procure a seaplane fighter represent an interesting advance in the development of Naval air power. The plane mentioned above is the Convair F2Y-1, a delta-wing, jet-powered type. Initial procurement will be on a limited basis in fiscal 1953, but the F2Y may become a very important plane in the Navy line-up. The seaplane fighter offers better performance potential, because of elimination of the landing gear system with its weight and complexity, and because the design sacrifices inherent in carrier-based fighters can also be eliminated. The F2Y-1 would presumably be handled by seaplane tenders operating with a carrier fleet.

The concept of a seaplane fighter is not new. People like Convair's Ernie Stout and "Dutch" Schildauer, formerly of The Glenn L. Martin Co., have been plumping for it for years. Convair has, as a matter of fact, been conducting design studies and model investigations of both fighter and bomber seaplane types for some time. The F2Y-1 procurement, however, represents the first time the Navy has shown more than an academic interest in the type.

The High Cost of Fighting

That the costs of aircraft are moving into astronomical figures is no secret, but every now and then an item comes along which points up the fact in a startling fashion. Here's the latest:

The K-1 bombing system used in the Boeing B-47 and Convair B-36, in its current production stage, costs more than a complete Boeing B-17 bomber did in World War II. The K-1 costs $250,000; in-production cost of the B-17 was about $230,000.

Some other interesting cost figures:

The Convair F2Y-1, mentioned above, will cost $5,291,560 each. This, of course, is because of limited production, and the figure will come down considerably if it goes into large-scale production, but it is staggering nonetheless.

A single helicopter of the Bell HSL-1 anti-submarine type will cost $617,620.

The *average* cost of an Air Force plane in fiscal 1953, which includes lightplanes, trainers, and helicopters, as well as the more expensive fighters and bombers, will be $773,000. This is based on officially stated plans to buy 6,410 planes at a total cost of $4,953,941,181.

In-Flight B-52 Refueling

Air Force plans to make the new eight-jet Boeing B-52 bomber adaptable to in-flight refueling constitute an important step in the development of strategic air power. This step will, in effect, create an intercontinental bomber with speed capabilities of over 600 miles per hour. With refueling, the range of the B-52 should about match that of the Strategic Air Command's present mainstay, the Convair B-36, since the range of the B-52 without refueling is about 6,000 miles.

It also provides an effective rebuttal to the foes of intercontinental bombing, who claim that the slowness of a long-range bomber such as the B-36 makes it a "sitting duck." But don't look for this new development tomorrow; the B-54 will not be in production until 1954, the USAF disclosed, so the B-26 will remain the No. 1 strategic weapon for some time.

. . . James J. Haggerty, Jr.

Which type of oil is best for your airplane engine?

For smooth, reliable performance—and to s-t-r-e-t-c-h the time between overhauls—just remember these two recommendations from Gulf:

For horizontally opposed, and Ranger in-line engines, use Gulfpride Aviation Oil, Series-D

Here's the world's finest detergent-dispersant aviation oil. By keeping contaminants "in suspension" and thus preventing them from forming harmful deposits, Gulfpride Aviation Oil, Series-D, minimizes ring and valve-sticking, oil consumption, oil screen-clogging, and plug-fouling.

Gulf's exclusive Alchlor process—an *extra* refining step—makes this oil *extra*-pure, *extra*-efficient. Users of Gulfpride Aviation Oil, Series-D, have actually increased periods between engine overhauls as much as 100%!

For radial engines, or where a detergent oil is not desired, use Gulf Aircraft Engine Oil, Series-R

Here's the best-quality buy in a non-detergent, straight mineral lubricating oil. Gulf Aircraft Engine Oil, Series-R, is approved by Pratt & Whitney and meets the requirements of other aircraft engine manufacturers for all types of service in radial engines. It may also be used in horizontally opposed engines when operating conditions do not require a detergent oil.

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It's great to go flying with GULF

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American Aviation

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Wartime Plan for Civil Transports Revealed

Entire 400 four-engine fleet to be modified; civil navigator shortage must be alleviated.

By Eric Bramley

A FLEET of 400 four-engine commercial aircraft is to be readied for military service in event of an all-out emergency, and 331 of these are to be modified at a cost of $10,000,000 to start flying under contract on 48 hours' notice.

A strong domestic and overseas civil air transportation system is to be operated in wartime under a priorities system with twin-engine and remaining four-engine planes. It will be necessary to redistribute some of these planes among the airlines.

This, essentially, was the plan revealed on March 26 to the presidents of all the U. S. scheduled and nonscheduled air carriers by the Departments of Defense and Commerce.

Two Categories

Although industry may have some disagreement with certain details, reaction to the overall plan has been good. The airlines now know what is expected of them, in contrast to World War II, when requisitioning of commercial equipment was a last-minute affair. They also know that a strong civil system will be maintained.

By far the greatest number of planes in the Civil Reserve Air Fleet will come from the scheduled airlines. Out of 400, they will furnish 358, including 28 now leased to them by the military, which would be recalled. Nonskeds will furnish 35, including 10 leased. Remaining seven will come from executive users, CAA and an intrastate line.

Planes needed by the military will be divided into two categories:

• **First Line Reserve Fleet:** 91 aircraft, which will be required continuously throughout a period of emergency. Included are 44 DC-4's, 11 DC-6's, 24 Constellations and 12 Boeing Stratocruisers.

• **Second Line Reserve Fleet:** Initially consisting of 240 planes—96 DC-4's, 88 DC-6's, 33 Connies and 23 Boeings. This will later be changed to a permanent reserve numbering 271, by removing some inefficient cargo carriers and replacing them with DC-4's modified after D-Day. The permanent reserve will include 138 DC-4's, 77 DC-6's, 33 Connies, and 23 Boeings. This fleet will be used during critical periods, the actual number needed fluctuating with airlift requirements.

Both of these fleets are to be operated for the military by the air carriers, under contract. However, the government is reserving the right to militarize the operations, although this will be done only by "highest authority" and then "only in cases of demonstrable necessity."

The primary function of the two fleets, at least initially, will be to meet the passenger and light cargo needs of the military, with Military Air Transport Service handling heavy cargo and specialized requirements. Average utilization of the planes in the fleets will be 10 hours per day after the first month of operations.

Although only 331 aircraft are to be modified immediately, the entire civil four-engine fleet, including new production planes, will eventually be readied for service.

Modifications include making provisions for items needed in over-ocean flying—radio, radar, Loran, survival gear, etc. Actual equipment will not be installed until needed, but will be kept

Ireland

Nyrop

Smith

Important Men in Mobilization

Here are the officials with major responsibilities for both military and civil operations of airlines in wartime:

Ray W. Ireland, Administrator of Defense Air Transportation within the Commerce Dept. He will allocate civil planes to the military, and will insure that civil requirements are not overridden by the military.

Maj. Gen. Joseph Smith, Commander of MATS. Responsible for implementation of the Civil Reserve Air Fleet plan. In event airlines were ever militarized, Gen. Smith would be Defense Department's executive agent to carry out transition from civil status to militarization of planes and crews.

Donald W. Nyrop, chairman of Civil Aeronautics Board. Responsible for redistribution among airlines of planes remaining in civilian service.

Director of Air Priorities, a position not filled, who would be under Defense Secretary, administering priorities in accordance with policies of Air Priorities Board.

Where Civil Air Fleet Will Come From

Operator	FIRST LINE RESERVE				INITIAL SECOND LINE				PERMANENT SECOND LINE			
	Boeing	DC-6	Connie	DC-4	Boeing	DC-6	Connie	DC-4	Boeing	DC-6	Connie	DC-4
Alaska Airlines	..	..	..	1	..	..	..	2	..	..	..	2
American Airlines	..	4	..	..	..	43	..	14	..	36	..	14
Arabian-American Oil	..	..	..	..	..	..	..	..	..	..	..	2
Aviation Capital	..	..	..	1*	..	..	..	..	..	..	..	..
Braniff Airways	..	..	..	..	..	6	..	..	..	6	..	4
California Central	..	..	..	1	..	..	..	..	..	..	..	..
California Eastern	..	..	..	4	..	..	..	..	..	..	..	..
Capital Airlines	..	..	..	..	..	..	3	2	..	..	3	4
Chicago & Southern	..	..	..	..	..	..	4	..	..	..	4	..
CAA	..	..	..	1**	..	..	..	..	..	..	..	..
Delta Air Lines	..	..	..	..	..	3	..	..	..	3	..	6
Eastern Air Lines	..	..	3	..	..	..	9	14	..	..	9	14
Flying Tiger Line	..	..	..	3	..	..	..	..	..	..	..	..
Frontier Airlines	..	..	..	1	..	..	..	..	..	..	..	..
Kaman Aircraft	..	..	..	..	..	..	..	..	..	..	..	1
National Airlines	..	..	..	..	..	4	..	6	..	4	..	6
Northwest Airlines	..	..	..	..	7	..	..	11	7	..	..	12
Ocean Air Tradeways	..	..	..	4	..	..	..	..	..	..	..	..
Pacific Northern	..	..	..	1***	..	..	..	..	..	..	..	..
Pan American	12	..	..	8	10	..	..	10	10	..	..	28
Panagra	..	..	..	..	..	5	..	1	..	5	..	4
Resort Airlines	..	..	..	..	..	..	..	..	..	..	..	2
Salem Engineering	..	..	..	..	..	..	..	..	..	..	..	1
Seaboard & Western	..	..	..	4	..	..	..	..	..	..	..	..
Slick Airways	..	..	..	..	..	3	..	..	..	3	..	..
Transocean Air Lines	..	..	..	10	..	..	..	..	..	..	..	..
TWA	..	..	21	4	..	..	17	9	..	..	17	9
Twentieth Century	..	..	..	..	..	..	..	..	..	..	..	1
United Air Lines	..	7	..	..	6	24	..	22	6	20	..	22
U. S. Overseas	..	..	..	1	..	..	..	..	..	..	..	..
Waterman (TACA)	..	..	..	..	..	..	..	..	..	..	..	1
Western Air Lines	..	..	..	..	..	..	..	5	..	..	..	5
TOTAL	12	11	24	44	23	88	33	96	23	77	33	138

NOTE: Permanent Second Line is a revision of Initial Second Line and is not in addition thereto.

DATA officials state that a number of the above planes are no longer operated by the companies listed, and in other instances errors have crept into the listings. These errors will be corrected as airline and government meetings progress. Typical error is listing of Frontier Airlines as contributing a DC-4. Frontier operates only DC-3's.

** Probably to be operated by Pan American or Panagra.*

*** Probably to be operated by Seaboard & Western.*

**** This aircraft not capable of 2,500-mile range.*

on hand by the carriers. Necessary "plumbing and wiring" will add 40 pounds to a DC-4, 25 pounds to a DC-6, 30 pounds to a Connie and five pounds to a Boeing.

Airlines in most cases are expected to handle their own modifications when planes come in for overhaul. Air Force will pay the bill.

As part of an eventual modification program, the AF favors voluntary conversion by airlines of DC-4 engines from R-2000-7 and -11 to R-2000-13. AF intends to determine the feasibility of obtaining kits for all DC-4 operators willing to convert.

In addition to modifications required for all planes, the Defense Dept. says that there are specific modifications needed on special groups of aircraft:

• **There are 34 DC-4's and 66 DC-6's** which should be adapted to light cargo configuration (100-lb. floor loading with tie-downs). This will be done on D-Day.

• **There are 59 DC-4's** not now capable of required range of 2,500 statute miles but which can achieve this range by addition of fuselage fuel oil tanks.

• **There are 76 DC-4's** (some of which are included above), originally designed for heavy cargo, which were sold by the military as surplus and converted by civil buyers to passenger configuration. Most of these planes can be reconverted to heavy cargo. Reconversion can be accomplished within 30 days after D-Day.

Manpower Problems

On the manpower side, the air carriers will face some knotty problems:

• **They are to be responsible** for procurement and training of personnel.

• **They must furnish** a minimum of 3.5 crews per plane, or a total of 1,168 crews.

• **There is a shortage of 1,000** civil navigators out of 1,400 needed.

Flight crews are not to exceed 100 hours monthly (plus or minus 10 hours for latitude of scheduling) or a total of 300 hours in any one quarter. Airline mechanics and other ground personnel will work a 48-hour week.

DC-4 and DC-6 crews will consist of a pilot, co-pilot, navigator and flight attendant (third pilot, radio operator and/or flight engineer may be added if required). Boeing and Connie crews will include these four plus an engineer.

In view of the navigator shortage, a program is to be developed under which operators can cross-train their pilots as navigators, and locate and arrange for emergency employment of qualified navigators. Assignment of military navigators to civilian crews may be an answer, but this is "undesirable and is considered an unsound personnel practice," the Defense Dept. states.

It adds that a Defense policy decision is needed "which will assure continued availability to the reserve fleet

(in civilian or military status) of all . . . Defense reserve personnel employed by the airlines and possessing skills required for the execution of this plan."

The overall D-Day training requirement, the Defense Dept. says, "means only an expansion of training within the contractors' existing organizations. Each contractor should determine which of his personnel he will use for the military support operation assigned to him, and within his own organization develop and implement the necessary training program."

AMC Responsibility

It was reiterated that in the overall training program emphasis must be placed on the necessity of alleviating the shortage of qualified civil navigators, and that it must be determined whether AF or contractor facilities will be used to train them.

Air Materiel Command is to be responsible for contracts, which will be of two types: modification of planes, and services, the latter including training, operations, servicing, maintenance and conversion. Prime contractors are to be kept to a minimum in order to simplify administration. Similar type operators (skeds and non-skeds) will be kept together.

On the subject of war risk insurance, it was pointed out that the Secretary of Commerce can provide airlines with such coverage if it is determined that insurance at reasonable rates is not available from private companies. Such a determination has not yet been made, but a Commerce Dept. program is "well advanced" and a program can be instituted on "short notice" if necessary.

On the civilian side, after planes have been taken by the military, here is what will happen:

• **CAB will determine** what civil routes and frequencies will be operated.

• **The CAB chairman will determine** how remaining planes will be redistributed among the carriers. This redistribution will include twin-engine as well as four-engine planes.

Non-Sked Service

There would be no civil non-scheduled airline operations as such during war time, according to civil air mobilization plans. After furnishing 35 four-engine planes for military contract service, the remaining non-sked twin and four-engine fleet "should be available to the military and to civilian defense either within or outside the United States," the Civil Aeronautics Board states.

Mobilization Timetables

Timetable on Civil Reserve Air Fleet plan is:

April 15, 1952: Operators will inform DATA of specific "N" numbers of planes recommended for modification.

May 1, 1952: Negotiate modification contracts with Air Force.

August 1, 1952: Negotiate overall standby contract with AF covering services needed to implement the plan, such as plane operations, training, maintenance, etc.

May 1, 1952: Survey manpower situation.

As requested by AF: Furnish plan for contract operation of their portion of fleet.

Timetable on wartime civil air service plan is:

May 25, 1952: Airlines to submit exceptions to proposed service pattern, allocations plan and standards used to derive capacity requirements, together with detailed justification and alternative proposals.

August 1, 1952: Announcement of initial War Air Service Pattern and allocations plan.

June 1 of each succeeding year: Circulation of tentative revisions in service pattern and plane allocations plan among the carriers.

July 1 of each succeeding year. Filing of exceptions to proposed revisions, with justification and alternative proposals.

• **Four-engine service will be provided** at least on all schedules containing one hop of 650 miles or more.

• **An Air Priorities Board** will be set up, through which the Secretaries of Defense and Commerce will exercise top authority and responsibility. It will provide joint policy direction over all air transport, military and civil.

• **A Director of Air Priorities** in the office of the Secretary of Defense will administer the priorities system, subject to policy guidance of the Priorities Board.

Much work remains to be done on the war air-service pattern and reallocation of remaining planes. The general plan is to redistribute remaining planes among the airlines on the "basis of their most recent percentage participation in the air transport market." For planning purposes, the 12 months ending December 31, 1951, will be used.

10-Hour Use

A CAB presentation at the presidents' meeting purported to show that the scheduled U. S. domestic, international, local service and a few Alaskan airlines would, after losing 358 planes, still have more than enough four- and two-engine capacity to handle 1951 traffic volume with standard seating arrangements, but with 10-hour daily use.

• **It showed that the airlines** would have remaining 738 twin-engine and 238 four-engine planes, producing 67,716,132 seat-miles daily against a 1951 daily passenger-mile average of 35,888,827.

• **If high-density seating were used,** there would be 91,249,943 seat-miles against the 35,888,827 passenger-miles, CAB said.

• **Transfer of planes between airlines** is to be by lease arrangements, and CAB is urging the carriers to work out such contracts (which may include crews, maintenance, etc.) as soon as possible.

• **Certificated cargo carriers will be allocated** enough planes to preserve the "proportionate distribution of capacity between all-cargo and passenger carriers." This may mean modification of passenger planes for freight service.

It is expected that there will probably be differences of opinion regarding the proposed priorities set-up, which has the Director of Priorities under the Secretary of Defense. Airlines are believed to favor a more clear-cut separation between civil and military, fearing that the whole set-up would be subject to military control. Government officials argue that although the director is under the Defense Secretary, he is subject to policy guidance from the Secretaries of both Commerce and Defense, and must be in Defense so he will have authority over military traffic.

S-55 Certificated; Delivered to LAA

The Sikorsky S-55 first transport-type helicopter slated for passenger service in U. S. has received its CAA certificate and Los Angeles Airways has accepted delivery (AMERICAN AVIATION, March 17). LAA will probably use the S-55 for carrying mail for a short time after initial crew familiarization, pending the delivery of the second helicopter.

PIONEER MARKINGS, as they will appear on PAL's Martins.

PAL Buys Nine 2-0-2's and Five 340's

Pioneer is first local-service line to invest in post-war aircraft, at a cost of $7,000,000.

In the biggest equipping program ever undertaken by a local service airline, Pioneer Air Lines has purchased nine Martin 2-0-2's and ordered five Convair 340's for delivery in late 1953 and 1954. The combined orders, making Pioneer the first local service airline to purchase post-war equipment, represents a total cost of approximately $7 million.

Pioneer purchased the Martin 2-0-2's from Northwest Airlines at a cost of $4,030,000 including modification, spare engines and certain training functions. At the same time, Pioneer sold all 11 of its DC-3's, Pioneer president Robert J. Smith announced. Although Smith did not disclose the identity of the new purchaser, it was later disclosed that the U. S. Air Force had purchased the planes and will lease them to PAL until the Martins are delivered.

Smith

Prior to delivery of the Martin 2-0-2's to Pioneer, the planes will first be modified by Texas Engineering and Manufacturing Co. at its modification center at Greenville, Texas. Involved is a $495,000 modification which will include some modernization. Other costs involved in the Martin purchase, which swell the total cost from the $2,700,000 paid for the nine planes to $4,030,000, include $374,500 for the nine spare engines and propellers, $310,500 for related equipment and $150,000 for transition and other training. Delivery of the planes is scheduled to permit service prior to June.

Pioneer's contract with Consolidated Vultee Aircraft Corp., signed Feb. 29, calls for the purchase of five Convair 340's at a cost between $2,675,000 and $2,875,000, depending on escalator clause developments. The first plane would be delivered in November, 1953 followed by one per month for the balance of the planes.

Financing of the equipment program would be handled as follows:

$1,100,000	from the sale of DC-3's
2,300,000	by bank loans
975,000	from sale of common stock
$4,375,000	

Price for the DC-3 sale remains fluid since final arrangements on the spare part sales have not been made. Bank loans will be arranged with the First National Bank in Dallas and the Chase National Bank of New York.

The 270 mile per hour cruising speed of the Martins, which will go into service prior to June, will permit Pioneer to reduce sharply current schedule times. On the Houston-Amarillo route, for instance, present DC-3 flight time of five hours fourteen minutes will be reduced by one hour and fourteen minutes. Flight time on the Dallas-Midland/Odessa run will be cut almost 30 minutes.

Weesner May Sell Lake Central Stock

Possibility of a change in management of Lake Central Airlines became apparent last week with the confirmation of reports that offers for the Weesner family's 78% interest in the line were being actively considered. Offers, at least a half-dozen of them, were in the neighborhood of $535,000.

John V. Weesner, executive vice-president and general manager of Lake Central said he, his father Roscoe P. Weesner and his brother William Weesner control 62,000 shares of Lake Central stock. According to reports, one of the potential buyers is Roscoe Turner, president of the airline and holder of approximately 18% of the stock. Turner was the founder of the airline but passed control to the Weesners in 1949 as a solution to problems preventing activation of the local service certificate issued by CAB.

Currently, Lake Central's management is being probed by CAB for possible violations of the Civil Aeronautics Act. John V. Weesner said the possible sale of his family's stock was not related to the CAB probe which would have to be completed as a separate measure.

New Interchange Deal Will Be Second in South

A new southern transcontinental interchange service, okayed recently by the Civil Aeronautics Board, is to be inaugurated April 14 by Eastern Air Lines, Braniff Airways, and TWA.

One daily trip will be flown, with EAL crews operating between Miami, Tampa, and Houston, Braniff crews between Houston, Dallas, and Amarillo, and TWA crews between Amarillo, Los Angeles, Oakland, and San Francisco.

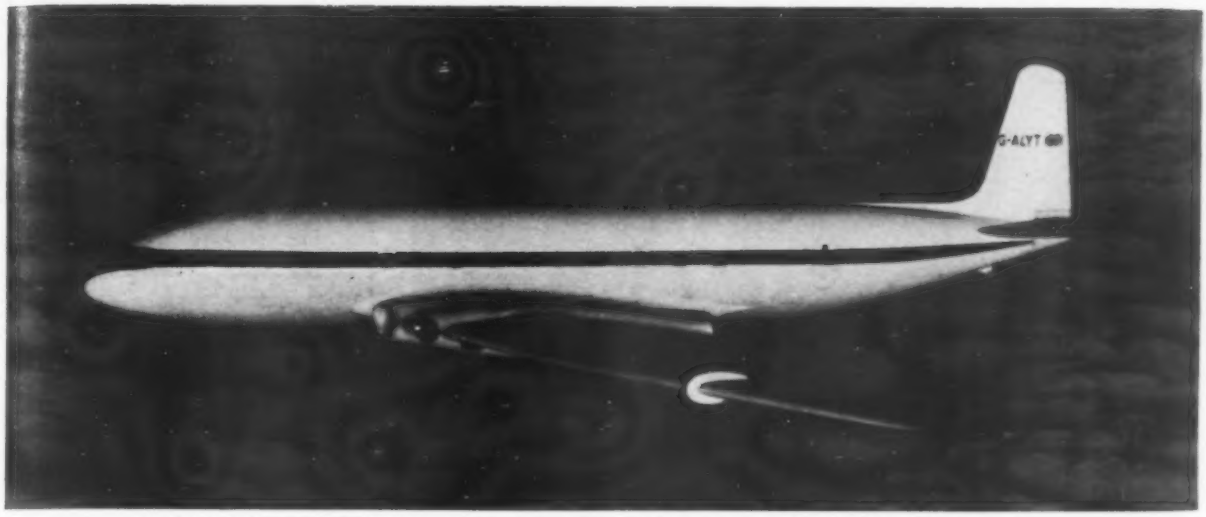
Initially, EAL Super Constellations will be used on the interchange, with TWA Connies taking over during the winter months. TWA pilots have been in Miami for familiarization training on EAL equipment, and a ground-training school for mechanics and flight engineers has been conducted in Los Angeles.

This will be the second southern interchange. American, Delta, and National are operating the other one between Miami and Los Angeles via Tampa, New Orleans, Dallas, and El Paso.

Convair 340 Receives CAA Type Certificate

Convair Liner 340 has been certificated for a maximum gross take-off weight of 46,725 pounds, landing weight of 44,500 pounds and zero fuel weight of 43,000 pounds. The type certificate issued by CAA to Consolidated Vultee is for 1,727 pounds over the new 44-passenger twin-engine transport's original specifications.

Certification flight tests were conducted at 47,000 pounds.



IF U. S. JET transport development is not accelerated, the Comet 2, equipped with Rolls Royce Avon engines, shown above during its first flight, might well be the answer to U. S. carrier requirements.

Pan Am Wants to Talk Business on Jets

If no U.S. builder will make a firm offer, line may be forced to buy transports abroad.

By WILLIAM B. PERREAULT

TIME is getting shorter and shorter for an American manufacturer to come up with an outright offer to build a specific jet transport design for a given price and with a reasonable guarantee of delivery dates, according to Pan American World Airways officials.

Pan American's President Juan T. Trippe has stated that PAA will buy jet transports on the foreign market, if necessary, to meet the competitive threat apparent in the development of foreign jets for scheduled service. Pan American will feel the competitive pressure of jet operations early, since British Overseas Airways, which has already taken delivery on a number of Comets, has an eye on the dollar-earning routes on which it competes directly with PAA.

Trippe

This is the period for a decision, Pan American feels. Serious consideration will be given anyone offering to build a jet transport in terms of "an outright offer or business deal" with cost and delivery indicated. To date, no one has offered.

As early as 1945, PAA had proposals of its own for a commercial jet transport, which it discussed with American manufacturers. Today the company has further developed its idea of what it wants. As Vice President Franklin Gledhill puts it: "We feel the best designers in the business are in the aircraft factories. Our business is to provide them with the operational requirements, and we are busy doing so."

PAA feels that a specification for a U. S.-built jet transport will be the result of mutual airline-manufacturer cooperation. As things stand today PAA officials have an open mind on several major design issues, issues which represent the basic differences in jet transport designs submitted for discussion. The airline has looked with interest on the three major designs now being discussed in the U. S. but still awaits a "business deal" on any one of them.

One important criterion, Gledhill feels, is that the aircraft be as near to conventional design as practicable. Certain major innovations will be required, such as swept wings, leading edge slats, and even parachutes for emergency-braking use on landing. PAA might be prepared to adopt some of these features, but feels at present that the pilot should not be further loaded down by such items as the bicycle-type landing gear, tricky wing designs, further cockpit complexity, etc.

Gledhill

Some of the key factors, as PAA now sees them:

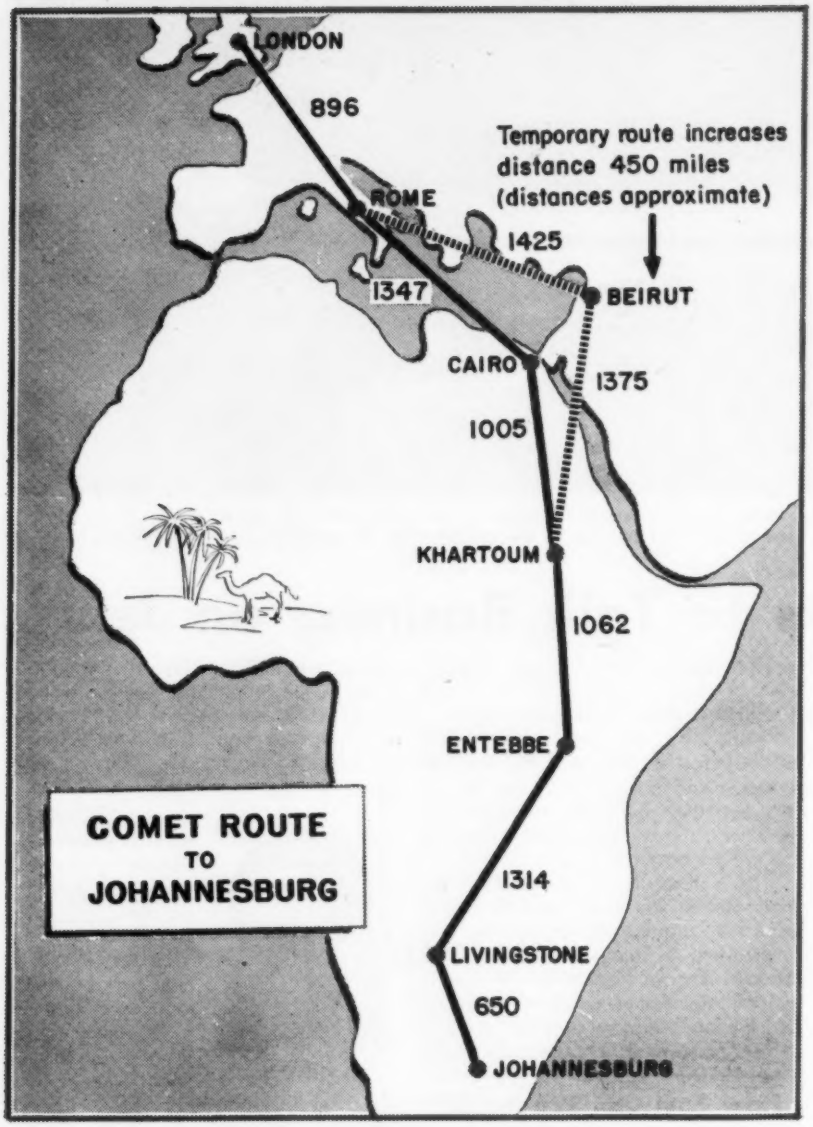
- **Top cruising speeds** in the Mach .85 to Mach .95 range, as contrasted with those under .80 for the present Comet.
- **Pressurization provisions** for 8,000-foot cabin altitude at 50,000-foot operating altitude. This calls for 9.2 pounds per square inch pressure differential.
- **Low-wing design.**
- **Flexibility** in passenger arrangements, allowing for PAA-type Sleeperette accommodations for 50-60 passengers, with rapid change-over provisions for a tourist-type, high-density interior, as in PAA's Douglas DC-6B's.
- **Keeping fuel out** of the fuselage,

How Fast Can We Build?

U. S. manufacturers can build a more advanced turbine transport than the British, but there is no known short cut for delivering production aircraft, according to officials of the Boeing Airplane Company. Labeling the production-schedule concept of Congress, the airlines, and the general public as false, Boeing officials set the following schedule as a realistic one, and then only if there is full cooperation from the military in making engines, materials, and accessories available:

- **Developments of detail specification and mock-up 9 months**
- **Construction of prototype 24 months**
- **Evaluation and certification 24 months**
- **First production airplane 30 months**

Boeing feels that there will probably never be another advanced turbine-powered transport, nor even a local-service aircraft, manufactured in the U. S. without government support.



New Traveler on an Old Continent

STARTING MAY 2 British Overseas Airways Corp. will operate one round trip weekly between London and Johannesburg, Africa, with de Havilland Comets, the first scheduled passenger operation in turbojet aircraft. Flight time for the 6,724 mile flight is 18 hours, 40 minutes. The plane will carry 36 passengers, four operational crew members, and two cabin attendants. By June this schedule will be boosted to three trips weekly. Initially the flight will operate via Beirut, but later this will be changed to a Cairo stop, cutting 450 miles off the flight.

including keeping it out of the wing centersection if possible.

- **Operation without engine afterburners,** although some other type boosting which doesn't present as serious a noise problem may be acceptable.
- **Operation on heavy fuel,** possibly on No. 2 fuel oil, as used in domestic oil burners, or marine diesel oil.

Pan American's basic desire is to get a jet transport which will fly the North Atlantic non-stop. The Comet, even in the Avon-powered version, will not serve this route as a practical operation without two fueling stops, westbound, according to PAA's calculations. Unfortunately, early U. S. designs do not yet show promise of practical non-stop operation, although designs are now aimed at this objective.

Performance here will be controlled largely by the engines. Engines rated in the 12,000- to 15,000-pound-thrust category appear to fill the need. However, to be successful in commercial operation, the engine must be developed with the service needs of airlines in mind.

Engine location is still a debatable issue. The pod appears to offer the best characteristics as regards maintenance accessibility, isolation of engines in the event of fire, or mechanical problems which might otherwise spread. It would appear particularly necessary to study the effect a pod might have in upsetting the aircraft in the event of a water ditching.

Fuselage-Buried

Pan Am looks on the fuselage-buried engines as providing more advantageous noise levels in the cabin if located behind the passenger cabin. While the pod advocates claim that asymmetric control problems in the event of an engine failure are taken account of in other respects, the fuselage-buried engines provide complete assurance that no such problem will exist, the airline feels. There is considerable question in PAA's view as to the merits of these side-by-side engines as regards fire protection and isolation in the event of mechanical problems although it is realized that such problems can be controlled by careful design.

It's interesting to note that Pan American prefers either of these engine proposals advocated by American designers to the wing-buried engine installations practiced abroad.

Multi-Engine

Still in the formative stage is an idea that a multi-engine jet transport which would be certificated for passenger-carrying service with less than the full number of engines in operation would be advantageous. Commercial engines of 12,000 pounds thrust might cost in the neighborhood of $150,000 each in development, but in commercial production it is hoped that this would be sharply reduced, according to present trends. This high cost will make the spare-engine problem at outlying stations critical. Inherent in any jet design would be a large surplus of power. Thus, if an aircraft were designed and certificated with the idea that, in the event of an engine failure, it could still be operated with passengers it would offer new operational flexibility. This would undoubtedly call for lower gross weights on such flights, to insure sufficient performance margins if even another engine should fail, but would do away with the spare-engine requirements at remote stations. In other words, the airplane would carry its own spares.

Some other considerations which control Pan American's jet-transport concept:

- **Window size** should be smaller to minimize weight and structure problems associated with high levels of pressurization.
- **Exits and doors** will have to be of the inward-opening variety, also because of pressurization requirements.
- **Landing speeds** should not greatly exceed those of conventional aircraft in present use (the highest stall speed now is 105 mph).
- **Fuel gauging,** quantity and flow, will be critical. This will require high-quality, capacitance-type fuel gauges.
- **Engines should be provided** with both shutters and screens. The screens will be manually or automatically operated to insure against foreign matter entering the engine during take-off, landing, or ground operation. The shutters will be used to reduce drag during engine-out operation.
- **Submerged antenna** will be mandatory.

Jet Schooling

Pan American is not merely talking its requirements. PAA pilots and engineers have gone to school at the turbine engine factories. Several PAA officers and officials, including Trippe, have flown in and observed the operation of different types of turbine-powered transports. Only recently, as a result of the mutual interchange of technical aid with British Overseas Airways, two of PAA's top maintenance and operations experts, Bill Taylor and Capt. Scott Flower, spent several weeks in London with BOAC's Comet unit in a detailed study of Comet operation. Pan American admires the work that BOAC and the British manufacturers have done, and additional visits are scheduled.

Equipment Program

Some PAA experts are concerned over the tendency to keep adding to and retaining things in the airplane, including some items which have been made obsolete by operational procedures but which continue to require pilot attention. This is true both in conventional and turbine aircraft. Consequently PAA will soon set up a program to evaluate every item of equipment in the aircraft, determine the need for each unit, its suitability for the job required, and related factors. Some units may be removed, others added. These changes will be reflected for the first time in the company's jet-transport purchase, when it comes.

RAMP SCENE at New York International (Idlewild) Airport shows congestion that has resulted from the addition of an extra 100 daily schedules to the field's operations. This picture was taken at 4.30 p.m., which is not a peak traffic hour.

How Airlines Are Meeting Newark Crisis

Speed and efficiency keynoted the transfer of traffic to Idlewild, La Guardia and Teterboro.

By KEITH SAUNDERS

THE TOTAL cost of the closing of Newark Airport may never be calculated with any degree of accuracy, but enough is known already to make it clear that the closing of a major airport, even in a meropolitan area fortunate enough to have other fields available, can impose a heavy burden of expense on the airlines and on the airport management.

Some of the known and estimated costs resulting from the Newark shutdown are as follows:

• **The airlines** were put to at least $1,000,000 in expenses in transferring their operations from Newark to La Guardia and New York International (Idlewild) Airport.

• **Port of New York Authority** has been and is being put to an expense of at least $5,000,000, much of which will be irretrievably lost when Newark is reopened, in making terminal building alterations, paving additional ramp space, putting up a cargo terminal building, and making other improvements required to accommodate the influx of additional traffic imposed on Idlewild.

• **American Airlines** has been losing an estimated $100,000 a day or $3,000,000 a month in passenger revenues as a result of having to cancel some schedules and of being unable to inaugurate others; Eastern says it is losing $1,500,000 a month, and other carriers are affected in proportion to the numbers of schedules lost.

• **Biggest losses** are yet to be felt, because close to 100 new schedules that the airlines would have added at New York on April 27, when daylight saving time comes in, cannot now be implemented because the general traffic situation at La Guardia and the ramp congestion at Idlewild would not stand the strain. These schedules would have provided an additional 5,000 or more daily passenger seats, and potential passenger revenues of several millions of dollars a month, plus additional cargo and express revenues.

When Newark was closed down on February 11 by the Port of New York Authority in deference to mounting public resentment and fear, the airlines and the Authority had a crisis of major proportions on their hands. Because La Guardia was already pretty well saturated from the traffic standpoint, it was decided to retain pretty much the status quo at that field and shift most of the Newark traffic to Idlewild. The transitions that took place are shown in the following table:

	Domestic Schedules Feb. 10	Domestic Schedules Feb. 15	Domestic Schedules March 1
Newark	97	None	None
La Guardia	222	258	219
Idlewild	24	65	124
	343	323	343

At first glance this table gives the impression that Idlewild has comfortably absorbed the Newark traffic and the status quo has been maintained at La Guardia. This does not, however, take into account the fact that a number of schedules that the airlines normally would have added on March 1 and April 1 could not be operated. Nor was the imposition of another 100 daily schedules at Idlewild on two weeks' notice a simple operation by any means. Here are some of the things the airlines had to do:

United Air Lines was able to lease the last available bit of ticket counter space in Idlewild's temporary terminal.

Eastern had only to move into ticket counter and operations space it had rented prior to the closing of Newark.

American Airlines, with the greatest number of schedules, required a lot of terminal space. Port Authority provided this by closing a number of operations offices at one end of the terminal, knocking out some partitions, and making room for lobby and counter space.

Colonial, which had to move its Canadian flights to Idlewild to make more room for domestic flights at La Guardia, could find no space of its own but was permitted to share National Airlines' counter.

Pan American had to move its Bermuda flights from LaGuardia to Idlewild but had sufficient counter space at the latter field to handle the additional load.

All-American Airways was able to get a little of the counter space United had leased.

Trans-Canada Air Lines, which had to move from La Guardia to Idlewild, was given counter space by Linee Aeree Italiane, which took a much smaller counter location relinquished to it by American and National.

Robinson Airlines first shifted from Newark to Teterboro, then moved to Idlewild, where Northwest Airlines and then American permitted it to share their counters.

Robinson and Colonial will have space of their own in the near future if the Port Authority decides to go ahead with a plan to convert the present domestic baggage room into additional ticket counter and operations office space and build a new prefabricated baggage structure in front of the terminal.

As far as runways are concerned, Idlewild was well equipped to handle the extra traffic load. It had four opera-

Behind the Story

To get a first-hand story of what has happened to New York's airports since Newark Airport was closed, the author of this article not only observed conditions at La Guardia and Idlewild from the ground but also went aloft in the Port of New York Authority's helicopter and got a good bird's-eye view of both airports. He was accompanied by Marshall D. Kochman, formerly of Delta Air Lines and now with the Port Authority's Airport Development staff.

tional runways at the time Newark was closed, and on March 7 it opened the 9,500 foot Runway D for use under daytime VFR conditions and put in a mobile control tower to serve that end of the field. Provisional lighting has been installed and this runway will soon be usable both day and night. Taxiways to facilitate its use and to link it and Runway C more closely to the terminal will be constructed in the near future.

The big rub was in apron or ramp space, with 26 domestic carriers wanting gate positions and with only 2,000 lineal feet of apron space available on the field side of the terminal. Here are some of the steps that had to be taken:

1. **The foreign-flag airlines,** most of whom operate only a few flights a week, consented to load and unload in an area several hundred feet away from the terminal.

2. **Lessees of space** in a private parking lot near the west end of the terminal moved to the public parking lot, to provide an additional aircraft loading position or two.

3. **Paving on the east side** of the Operations-Cargo Building was used to provide three additional aircraft loading positions, and paving was to be put in to provide at least two additional positions in that area.

4. **Apron fingers** were arranged through the use of link chains and stanchions, and parking clearances were shortened considerably, so that more planes could be parked in a given area.

5. **Spotting of planes** was planned with the utmost care, spots are repainted every week or so, and pilots are required to hit them almost precisely.

6. **Ramp patrols** were established, ramp violation forms were agreed upon, and an exception form was worked out, with the result that prompt action has ensued when a pilot failed to observe the required parking clearance, usurped another carrier's gate position or stayed at a position beyond the allotted 30 minutes.

7. **Daily meetings** of the station managers of all the airlines were held during the first few weeks after March 1, and many operating problems were thus resolved. These meetings are still held, but at less frequent intervals, since many of the early difficulties have been ironed out and things are going more smoothly.

Other problems have been:

• **Ramp equipment:** Airlines moving to Idlewild consented to park most of their ramps, baggage carts, etc., in an unused area near the terminal for one month while a determination was made as to how much would be required as a minimum. Result is that the ramp has not been cluttered up with a lot of little-used equipment and much joint use is being made of equipment.

• **Fueling:** The increased traffic at Idlewild sent its fuel volume up from less than 1,000,000 gallons a month to about 4,500,000 gallons a month. Additional fuel trucks had to be brought in, new fueling areas had to be designated, and a large number of new grounding roads had to be installed.

• **Maintenance:** All five of the hangars at the field were already rented and occupied when the new carriers came upon the scene. Some sharing was arranged. For example, Air France let The Flying Tiger Line have a portion of its hangar, and Northwest Airlines agreed to perform maintenance for All-American Airways. The Port Authority, in addition, granted permission to Eastern Air Lines, United and several others to build nose docks and temporary prefabricated buildings alongside unused runways, and utility lines were extended to such areas.

• **Cargo:** Slick Airways and the Flying Tigers were confronted with a real problem when they moved to Idlewild, for there was no storage space available in the Operations-Cargo Building. They had to use canvas tents and rented truck-trailers for warehouse space. The Port Authority hurriedly let a contract for the erection of two prefabricated steel storage buildings totaling 40,000 square feet, and these were due to be ready for occupancy by mid-April, at which time Riddle Aviation and U. S. Air Lines, who have been at Teterboro, planned to move to Idlewild. Erection of the cargo terminal also entailed provision of plane parking aprons on one side, truck aprons on the other side, and a new access road to the terminal. Cost of the terminal was expected to exceed $250,000. Meanwhile, a contract is being readied for construction of a one-story addition (20,000 square feet) to the south wing of the Operations-Cargo Building, and the provision of 30,000 square feet of additional paved truck apron in the interior court between the two existing wings of the building.

George McSherry, manager of Idlewild, estimates that the emergency actions that have been taken there may have saved the airlines as much as $6,000,000 in passenger revenues in the period since Newark was closed, this being his estimate of sales the airlines could have lost had Idlewild not been able to provide some sort of accommodation for them.

ANOTHER VIEW OF THE TERMINAL AREA at Idlewild, taken from a Port of New York Authority helicopter, shows graphically what the traffic increase resulting from the closing of Newark Airport has meant at the big international field. Double-parking of planes on apron in front of the terminal; use of new makeshift apron fingers, such as the one shown clearly in the center of the photo; use of hardstands in front of operations-cargo building (lower left) as parking aprons; conversion of a former private parking lot between the operations-cargo building and the operations section of the terminal into an aircraft parking area; shifting of foreign-flag carriers' positions to area around the bend in the terminal area (upper center); all have combined to alleviate what might otherwise be an intolerable situation at Idlewild. Note the 2,300-car parking lot in front of the terminal, almost empty two months ago and now filled.

House Passes NACA Appropriation

Authorization for the National Advisory Committee for Aeronautics to spend $19,700,000 for construction and equipment has passed the House of Representatives and has been sent to the Senate. The Langley Laboratories would get $13,108,000 to convert the pressure laboratory and construct a high-temperature structural research laboratory, with the remaining $6,592,000 to be used at the Lewis facility in Cleveland for a high-pressure air supply and distribution system, and for expanding jet-engine research facilities.

LOCKHEED SUPER CONSTELLATIONS undergo pre-delivery grooming as first phase of EAL's re-equipment program ends.

Picture News

FIRST BREGUET Deux Ponts 761S, equipped with Pratt & Whitney R-2800 B 31 engines was handed over to Air Algerie for evaluation tests. Carrier will use plane to ferry cargo between Toulouse and Algiers. Only after completion of tests will plane be granted passenger certificates.

SKETCH OF LOCKHEED'S 65-ton, all-cargo version of Super Constellation to carry a 36,300-lb. payload, cruising at 330-340 mph. First of these freighters will go into trans-Atlantic service for Seaboard and Western Airlines.

TANKS BEING TESTED are installed on piston-powered Super Connie.

First Commercial Transport Tip Tank Readied

Tests have begun on 600-gallon tank designed by Lockheed for proposed turboprop Super Connie.

EXTERNAL fuel tanks will make their appearance on commercial airliners with the advent of turbine power.

First step in this direction is Lockheed Aircraft Corp.'s design for a 600-gallon tip tank to lengthen the range of its proposed 150,000-pound turboprop version of the Super Constellation, particularly for overseas operation.

Lockheed already is flight-testing a set of the tanks on the prototype of the Model 1049 piston-powered Super Constellation, and progress reports are all favorable.

33 Sources

Use of the outside tank has been widespread, however, on military planes ever since Lockheed pioneered the device with the tip tanks on the P-80 in 1944. The astonishing discovery was made that in a power-off glide starting from 40,000 feet, one of the jet fighters so equipped would carry seven miles farther than the same airplane without the tanks.

There are now 33 sources of tip tanks in the U. S., a figure graphically illustrating the growth of the device's acceptance.

It is fitting that Lockheed be the first to design a tip tank for a commercial transport, since the device was invented by C. L. ("Kelly") Johnson, Lockheed's chief research engineer.

Lockheed settled on the 600-gallon tank for its turboprop Super Constellations after studying a number of designs. Determining factor in how big a tip tank can be is taxiing. In one jet bomber, for example, which makes use of a pair of 1,350-gallon tanks, the bending play in the wing between taxiing on the ground and flying in the air is a substantial three feet with full tanks.

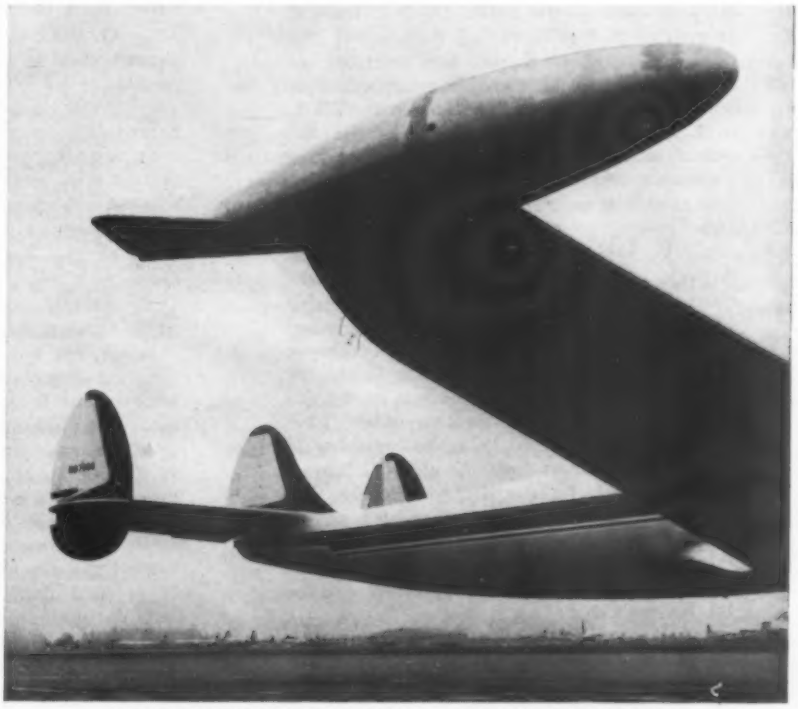
Empty weight of each 600-gallon Super Constellation tank installation is 300 pounds. Fuel weight for a full tank would be 3,600 pounds. Wing deflection at these weights would be no more than one foot, and there would be no interference with the taxiing or ground-maneuvering characteristics of the airplane.

From the safety viewpoint, Johnson would be only too happy to figure out a way to put all the fuel in tip tanks and take it out of the wings. He's gone so far as to have his engineers make studies of a tip tank with its own landing gear as a means of overcoming the taxi problem for high tip-tank loads.

Lockheed's Constellation was started with a fuel capacity of 4,400 gallons. It keeps going up. The Super Constellation will take up to 6,570 gallons of gasoline in the tanks within its wings. This is sufficient for ranges up to more than 4,500 miles with the Wright compound engines which will be used to power the Model 1049C's.

Fuel Increase

Lockheed has plans to increase the fuel capacity of its turboprop Super Constellations up to 8,600 or 8,700 gallons. This will be accomplished first by the addition of the two 600-gallon wing tip tanks and then, if desired, by two pods, each having a capacity of approximately 500 gallons, which can be fitted under the outboard nacelles.



TANK DESIGN follows military pattern, includes NACA-developed half-tail. Four compartments reduce fuel shifting.

Interview

with

Louis R. Inwood

President, Airport Operators Council

★

Where the Airport Operators Stand

★ ★ ★

About Louis Inwood, Louis R. Inwood, recently elected president of the Airport Operators Council, is Kansas City's director of aviation. Now 55, he started in aviation in 1928 with Standard Airlines, predecessor to TWA, in California. When TWA was formed and moved to Kansas City, Inwood remained in California, where he began a fixed-base operation at Alhambra Airport in the Los Angeles area.

In 1933-34, as head of the Southwest Aircraft Association in three southwestern states, he went to Washington to seek a suitable NRA code. Remaining in the capital, he joined the old Aeronautical Chamber of Commerce for a year and a half; in 1935 he joined the Interstate Commerce Commission in the air mail bureau. With the creation of the Civil Aeronautics Board in 1938, he went to it, together with others from the old ICC bureau.

In 1941, he was drafted into the War Production Board, where he occupied an important spot in aircraft production work. He joined TWA in 1943, remaining there until 1948, when he was named director of aviation for Kansas City.

Inwood was a founder of the Airport Operators Council over which he now presides, an association made up of the management of the nation's largest airports.

Q. What is the Airport Operators Council's biggest problem in 1952?

A. The No. 1 objective is to weld AOC closer to all other phases of the aviation industry for joint cooperative action. As one example, the federal government wants the airlines to pay for the use of the federal airways. We as airport operators do not think this is sound. The government provides navigation and port facilities for waterborne traffic: why should it single out aviation for special attack? The airways facilities are established for all who use the air. When the federal government adds to the cost of operations, or penalizes one segment of aviation, it penalizes and increases the cost of all other phases of the aviation industry. It behooves all of us in aviation to cooperate if aviation is to progress.

Q. How do you propose to go about getting cooperation?

A. We took the first step at our annual meeting in Los Angeles. We agreed to set up a joint public affairs committee with the Air Transport Association, and I have already talked with Admiral Ramsey, president of the Aircraft Industries Association, about getting the aircraft manufacturers to participate in this same committee.

Q. What is this committee to do?

A. It will be a public relations committee. We hope to coordinate our public relations problems, to try to play the same music in the same key instead of each group playing its own notes in its own way as in the past. It's time we played together.

Q. In the light of what happened at Newark Airport, do you consider public relations an important function of airport management?

A. I most emphatically do. That's one reason I'm setting up a joint committee with ATA.

Q. What do you think of the safety factor of close-in airports such as Newark, Kansas City, Chicago and other points?

A. A close-in airport does not constitute any greater hazard than an outlying airport. Approach and take-off even at an outlying airport must be made over residential or industrial areas in almost all cases. It is impractical to relocate any major number of airports or to make any major change in airport configuration.

Q. Do you think Newark Airport should be reopened?

A. Definitely—and soon.

Q. Are airports paying their way today?

A. No, but they're approaching a paying basis. About five years ago cities awakened to the fact that airports were costing a lot of money and the drive began to make them self-sustaining. A lot of airports are breaking even or better on a straight intake and outgo basis, but only a very few who are given surplus facilities as a gift or for a nominal sum are actually in good financial shape. But there has been steady improvement.

Q. Is the federal government paying its fair share toward the airport industry?

A. I don't think so. Cities have put more money into the promotion of the aviation business and air transportation than has the federal government. The federal government is still getting a lot of free rides today, although the CAA and the Weather Bureau are doing a pretty good job of paying their way. There is no reason why

the airlines or airports should furnish air-conditioned offices for federal functions such as customs, immigration, public health, quarantine, and the like, or why federal aircraft should not pay their fair share of landing fees. One major airport estimated that if all of the federal civil and military airplanes that landed on its field during one recent year had paid commercial landing fees, the airport would have collected $400,000. Municipalities have subsidized general aviation through the years. The federal government has had the free rides.

Q. To what extent is that old complaint about dirty washrooms, poor food, etc., at our airports still justified today?

A. The majority of airports are doing a first-class job in providing adequate facilities and good restaurants. Many now have lounges for mothers with babies on a 24-hour basis. Most airports are trying hard.

Q. At Wichita, Kansas, the Air Force has taken over completely the existing muncipal airport and is paying for the construction of a brand new one for the city. Is this likely to happen at other points?

A. I doubt seriously that this will happen anywhere else. Wichita was an exception. The Air Force had a tremendous investment in the new Boeing plant. It was more economical in the long run to convert the airfield into exclusive military use.

Q. What do you feel about the proposed elimination from the CAA's fiscal 1953 budget of funds for the continued operation of the operations and management advisory services of the CAA's office of airports?

A. That office has been of material use to small airports and ought to be continued. It is of no value to the large airports, but it has been of much value in helping small communities understand airport problems and in helping them to plan and operate smaller airports.

Remedying Bottlenecks

Q. Are our major airports going to be able to keep abreast of growing air traffic in such matters as airline gate positions, warm-up areas, parking aprons, and taxiways?

A. The airport industry recognizes that the bottleneck has moved from the air to the ground and most AOC members are doing something about the problem right now. Kansas City, for example, has just opened a new 7,000-foot runway with nine bleeds to help get traffic moving. We hope to cut runway occupancy time down to 25 seconds, which we believe will in turn help eliminate the bottleneck on the ground.

Q. How do you size up CAA's proposal for preferential runway use?

A. In some cases there would be a considerable benefit, but the preferential runway is not a cure-all, and in many cases it would have no benefit whatever.

Q. What do you see as the most constructive move the airport operator can make to help minimize the noise problem?

A. Noise is one of the most serious problems we have to solve. The people in Elizabeth, N. J., were ready to march on Newark Airport before there was an accident. I don't believe the aircraft manufacturers realize the seriousness of noise. In AOC we believe there must be intensified research by the NACA and the manufacturers. Cooperative education by the airline and airports can materially assist in public understanding.

But over and beyond this, I believe we should establish a maximum noise level for all civil aircraft. Military aircraft exceeding this maximum noise level should not be permitted to use civil airports in peacetime.

Q. Are there any other maximums you believe should be put in regulation form?

A. The CAB must promulgate regulations calling for a maximum number of pounds per square inch of tire loading pressure and maximum length of landing and take-off requirements.

Civil Tenants

Q. Despite some $78 million available from local sponsors, CAA sought only $15 million in matching funds for Federal aid to airports for fiscal 1953, and will probably get much less House support. How serious is this to the nation's airport system?

A. I think it is much more economical for Congress to expand the Federal airport system by matching funds with local sponsors to meet defense needs than to appropriate huge funds for development of military fields in areas where no normal peacetime use is contemplated. Funds should be spent on exclusive military airfields only when the military plans to use those fields in peacetime. For emergency expansion, the military should become tenants on civil airports. The cut in funds is serious.

Q. Which do you blame for the breakdown in the Federal air airport program—Congress or the CAA.

A. I blame the Department of Commerce. The CAA was choked off by Commerce and never had a chance to get its requests before Congress. The CAA should be taken out of Commerce and restored to its status as an independent agency as Congress initially intended.

Q. Do you feel that CAA's present requirements and standards for runway marking are realistic?

A. For two years the airport industry has been trying to get the CAA to set a new standard for runway marking. We have high hopes that eventually we might obtain same. In the meantime, AOC is promulgating its own standard and shortly will be pleased to advise others who wish to follow standard marking of larger airports.

Q. Have increased operations at the country's leading airports off-set rising costs to such an extent that a decrease in operations would force increased landing fees, rentals, etc.?

A. No, but it is interesting to note that the cost of maintenance at most major airports has increased substantially as a result of revised designs of aircraft. We used to have good prop clearance with the DC-3. But no more. A few pebbles on the runway with an 11-inch prop clearance on the Convair, for example, can do a lot of damage to the prop. We have to sweep our runways clean today. Even the new nose gear requires cleaner runways. New airplanes are making for increased maintenance costs. The reversible prop is the most serious threat to runway pavement yet invented. When the reversible props are applied, there is more vibration in the airplane than during any other time. At the same time you have a maximum weight applied. The combination of vibration and maximum weight produces great strain on the runway paving. These are just a few instances of how new design trends are

"Military aircraft should not use busy civil airports"

adding to airport operating costs.

Q. Few municipally-sponsored hangar projects have been started in recent years, yet airline operations have expanded greatly and new facilities would seem to be in demand. What are the facts on this?

A. The facts are that most airports are perfectly willing to enter into fully self-amortizing leases and build anything the carriers desire.

Q. During 1951 the CAA put some 40-odd airport control towers on part-time operating basis to cut costs. Has this had a major affect?

A. Not that I know of, but if this tendency continues it will have a serious effect. The limit of this kind of economy has been reached.

Q. Do the airport operators feel that the standards recently established by the CAA to determine whether traffic control towers, landing aids and similar facilities are justified at any given airport, are equitable standards?

A. In the main, yes. I think they will have to give consideration, however, to increased defense activity in some areas. Facilities may be required because of military activity and in this case the military should contribute to the support of such facilities.

Jet Problems

Q. There appears to be considerable controversy over the degree of damage that might be expected when turbine-powered transports start operating from civil airport runways. What's your opinion?

A. I don't anticipate damage to runways. It will be the fire-up blocks and perhaps the first 500 feet of runway that will require special consideration. After a jet airplane starts moving you don't have any trouble.

Q. Is there any constructive program underway to study the possible effect of jet transports on airports and what can be done to minimize related problems?

A. All AOC members have had this problem on their agenda for the past several years and will continue to keep informed. Our technical committees are active. We will be able to meet jet problems by the time jet transports are available.

Q. Do airport operators feel the war-damage claim legislation, as it exists today, is equitable? There is a time limit on applications.

A. We definitely favor re-opening this through the McCarran bill (S. 2815) now pending in Congress.

Q. Would you list the major sources of revenue in what you consider to be the order of importance?

A. I consider them in the following order of importance: restaurants, parking, U-Drive-it service, taxi and bus franchises, newstand, cocktail bars, landing fees, concessions, hangar and office rentals, airline rentals, and other aviation revenue.

Pay telephones, pinball machines, newstand and restaurant space, all return better than $25 per square foot per year at Kansas City, for example. Baggage lockers return $24 per square foot and pinball machines $29. Our parking lots net 85c per square foot. A Coke machine nets $11.20 per square foot, and electric hobby horse $26, and a popcorn machine $3.97. On the other hand, airlines pay $2.50 per square foot per year for preferential space in the lobby for ticket counters.

Q. What is the current attitude towards CAA's single runway airport edict?

A. We believe this has been widely misinterpreted and the CAA should immediately clarify it by agreeing to contribute to the purchase of the necessary land to give wind coverage. The promulgation was basically sound based on the premise that the CAA desired to develop more airports. However, the CAA should encourage all new airports to give wind coverage at their own expense with the CAA contributing to the purchase of land.

Q. There has been considerable criticism about the quality and quantity of airport fire protection equipment. What is the attitude of the airport operators on this problem and especially toward the National Association of Fire Prevention recommendations?

A. We feel the NAFP has been unrealistic in their demands for fire-fighting equipment. They keep recommending more and more equipment. They are striving for perfection but economics don't justify it. It's like having a fire station in every city block. Only a reasonable amount of equipment is warranted.

Q. Would you care to comment on the methods used by the Federal Government in investigating airports being considered for 'recapture' by the Air Force?

A. Since the advent of the airport use panel by the Air Coordinating Committee there has been very little trouble. The military services have cooperated heartily with the civil side.

Q. Do you believe it likely that airport zoning legislation, in the past largely directed against erection of obstruction around airports, will now turn in the direction of the safety of citizens living near airports?

A. Zoning for use adjacent to airports is impractical in my opinion. It would be very difficult to tell an owner, through zoning, that he couldn't live on his property. One solution to the safety problem would be for airports to acquire strips 1500 feet wide and a half mile long as extensions of their runways. Thus the airport would own and control the critical area extending beyond the runway.

Q. Do you approve of the British opinion that the ability to make short landing runs should be built into aircraft and that this function should be considered part of the design problem?

A. Most emphatically—yes.

Q. How is joint civil-military use of airports working out in high-density airports?

A. It doesn't work in high-density-traffic airports. There shouldn't be mixed traffic at high-density fields. Military aircraft should not use busy civil airports. There are about 10 or 15 civil airports that cannot or should not take military traffic. But all of the other airports can accept it, and joint use is working out satisfactorily.

Q. Who controls the Airport Operators Council?

A. AOC is genuinely controlled by its membership. It votes on all matters of policy. It is truly democratic. No one member casts over one vote no matter what size or importance.

Q. Have relations between airlines and airports improved in recent years?

A. Very noticeably so. Airlines and airports in most instances are dealing on an equitable basis. There are a few exceptions on both sides but these will probably improve in time.

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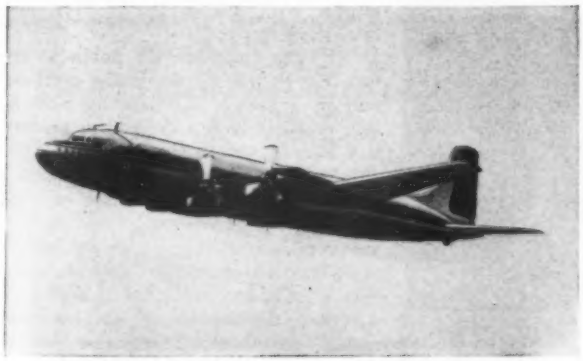
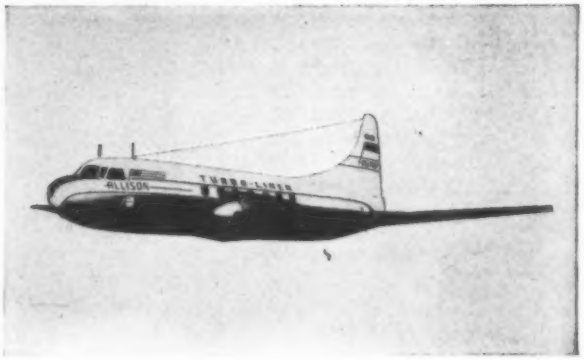


New Douglas DC-6B's being built for Pan American World Airways will be equipped with G-E electrical systems. G-E provides the most complete electrical protective systems ever placed in production for commercial transport-type aircraft.



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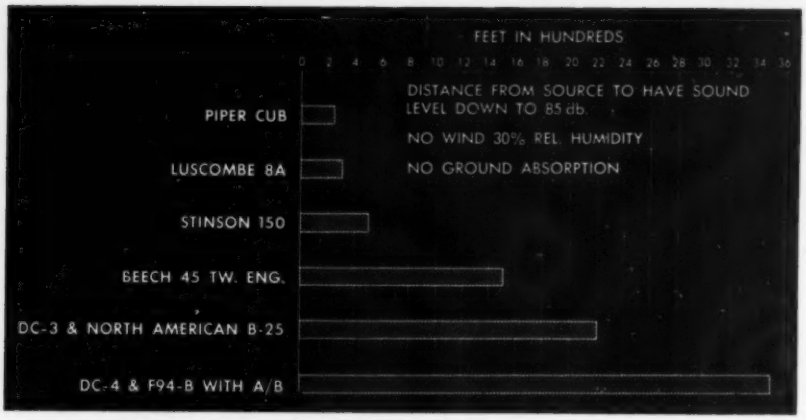
GENERAL ELECTRIC

210-16



DISTANCE FROM SOURCE of noise to point where sound level is down to 85 decibels is shown in graph above.

Can Aircraft Noise Levels Be Reduced?

Yes, says Lockheed's Hall Hibbard, by the combined efforts of designers, pilots, and airport operators.

JET AIRCRAFT are quieter than those with reciprocating engines, and the type of sound they make is more pleasant, according to Hall L. Hibbard, vice president and chief engineer of Lockheed Aircraft Corp. Speaking on the commercial airport noise problem at the recent Aircraft Operators Council conference at Los Angeles, Hibbard predicted that the advent of jet transports in the U.S. should reduce noise levels around airports, although jets will produce nearly the same volume of overhead sound.

Hibbard cited a test recently conducted by the General Electric Co. in which sound levels of a Douglas DC-4 and a North American B-45 were compared. The test showed, he said, that in all cases the four-engine jet was quieter than the four-engine piston airplane. The public might not agree with results of the tests, Hibbard pointed out, because the sound of jet engines is unfamiliar, hence unpleasant. Education of the public and increased use of jets will overcome this prejudice. Furthermore, he said, the higher speeds with which jets will pass overhead makes the duration of the noise shorter.

HALL L. HIBBARD vice president and chief engineer of Lockheed Aircraft Corp., addressing Airport Operators Council.

Larger Props

Hibbard submitted a list of suggestions aimed at helping reduce aircraft noise. These were directed to the commercial aircraft designer, the pilot, and the airport operator. Among his recommendations were the following:

To the aircraft designer—

• **Large-diameter propellers,** turning at a low rpm, should be used for reciprocating and turboprop aircraft.

• **Use of mufflers** or other noise-reducing devices should be "seriously considered" for prop-driven aircraft.

• **Pure jet engines should use water injection** for added take-off power or properly designed, smooth combustion-type partial after-burners. Full power augmentation by afterburners should not be permitted.

• **Landing-gear designs** permitting operation off a single runway should receive consideration.

• **All present commercial airplanes** should be tested and certificated for use in the highest possible cross-wind consistent with safety.

To the pilot—

• **Climb away** from airports as fast as is consistent with safety. Jet transports will permit even sharper angles of climb.

• **Fly higher** when approaching airports; descend at steeper angles.

• **Study how to eliminate** most pre-take-off engine runups for reciprocating-engine aircraft.

• **In tricycle-gear** aircraft, take off on runways over least-congested areas.

Here to Stay

To the airport operator—

• **Include as much grass as possible** on the airport's surface, surrounding the airport with alfalfa, grain fields, and low, thick hedges.

• **Help enlighten the public** to the fact that jet transports cruising overhead and in approach and landing patterns will probably be less noisy than present-day aircraft.

Hibbard said that municipalities should consider proper zoning of present airports, but the public realizes that the airplane and the airport are here to stay. People live next to railroads, interurban lines, and heavy-traffic highways, accepting the concomitant noise without public complaint. This same responsibility must be accepted by people living in the area of an airport, he said.

Vital Factors

Speaking on the commercial airport noise problem, Hall L. Hibbard told the Airport Operators Council conference at Los Angeles that the following factors are among those effecting sound:

• **Humidity.** Sound waves are absorbed by humidity in the air. Airports in low-humidity areas such as El Paso, Phoenix, and Palmdale have less of a noise problem with a given amount of originating sound than high-humidity airports such as Washington National and LaGuardia.

• **Wind.** Sound carries poorly upwind. For new airports yet to be located, consideration should be given to location downwind in the direction of the prevailing wind.

• **Terrain.** Ground noises dissipate themselves against such objects as buildings, hills, trees, and hedges, although noise from overhead planes is only negligibly affected by terrain. Soft surfaces, such as grass-covered fields, are definitely preferable from a noise viewpoint to concrete-covered surfaces.

• **Human effect.** The human ear accustoms itself to continuous noises if the intensity is not too high.

• **Volume.** Two aircraft engines running together are not twice as noisy to the ear as one engine.

INFORMATION on positions at NORTHROP

Northrop Aircraft, Inc. is engaged in vitally important projects in scientific and engineering development, in addition to aircraft production. The program is diversified, interesting and long-range. Exceptional opportunities await qualified individuals.

The most responsible positions will go to top-caliber engineers and scientists. However, a number of excellent positions exist for capable, but less experienced, engineers. Some examples of the types of positions now open are:

ELECTRONIC PROJECT ENGINEERS... ELECTRONIC INSTRUMENTATION ENGINEERS... RADAR ENGINEERS... FLIGHT-TEST ENGINEERS... STRESS ENGINEERS... AERO- AND THERMODYNAMICISTS... SERVO-MECHANISTS... POWER-PLANT INSTALLATION DESIGNERS... STRUCTURAL DESIGNERS... ELECTRO-MECHANICAL DESIGNERS... ELECTRICAL INSTALLATION DESIGNERS.

Qualified engineers and scientists who wish to locate permanently in Southern California are invited to write for further information regarding these interesting, long-range positions. Please include an outline of your experience and training.

Allowance for travel expenses.

Address correspondence to Director of Engineering, Northrop Aircraft, Inc. 1043 E. Broadway, Hawthorne, California

Devastating armament, advanced search and navigation equipment and high speed make the Air Force's new Northrop F-89 Scorpion a powerful defensive weapon. Like the Northrop Black Widow P-61 of World War II, the Scorpion was designed from the outset to do a specialized job superlatively well. This new all-weather interceptor is another product of the long experience of Northrop's top designers and craftsmen.

NORTHROP AIRCRAFT, INC.

HAWTHORNE • CALIFORNIA

PIONEER BUILDERS OF NIGHT AND ALL-WEATHER FIGHTERS

SAS

DOVE SALES in U. S. total almost $4,000,000 to date, and attempts are being made to increase production to meet demands.

PAC Becomes U. S. Service Center for Dove

De Havilland Dove operations moved from Canada as U. S. buys two-thirds of production.

UNITED STATES customers, primarily executive-aircraft operators, are now buying two-thirds of all production of the de Havilland Dove, the twin-engine light transport now in use in almost every country outside of the Iron Curtain. U. S. sales to date have totaled almost $4 million, and attempts are now being made to increase Dove production to meet apparent customer requirements in this country.

To provide a sound basis for its fast-growing sales and service operations, de Havilland Aircraft, Ltd., previously operating from Canada, has established a new distributor arrangement in this country, plus an approved engine-overhaul base and other facilities.

Parts and Overhaul

U. S. center for Dove sales and service will be Pacific Airmotive Corp.'s East Coast base at Linden, N. J. PAC's headquarters in Los Angeles, which arranged the deal with de Havilland, will serve as distributor of the Dove in five West Coast states. The Eastern Division of PAC has an additional 13-state distributorship, plus full control over all parts sales and exclusive engine-overhaul rights for the Gypsy Queen 70-4, the powerplant of the Dove.

Arranged in negotiations between PAC president Tom Wolf, I. S. Fossett, the U. S. manager for de Havilland, and Bruce H. Atwater, PAC vice-president-sales, the new deal is designed to shorten the supply line between the manufacturer and user and assure top-quality handling of Dove parts and overhaul business.

A quarter-million-dollar spare parts stock for the Dove is being established at PAC's Linden base. This stock is already at PAC awaiting completion of newly arranged storage facilities. Meanwhile, under the direction of PAC's Linden manager, Arthur Williams, a new test cell is being constructed for handling the Gypsy Queen engine. Part of the overhaul shop is being set up with the special tooling required for overhaul, and new provisions are being made to provide optimum customer relations.

Jack Riley of Longview, Texas, who has sold some 20 of the 30 Doves already delivered in this country, will continue as Dove distributor in the Southwest, while Gordon Wyrick of Gordon Air Services, Inc., Pontiac, Mich., will operate as distributor in the Great Lakes area. A number of states are still open territory.

Another 12 Doves have been bought and paid for but not yet delivered, bringing the U. S. sales to 42, with delivery schedules, four per month, the major controlling factor. This means, dollar-wise, that the Dove has made a greater penetration of the U. S. market than any other foreign civil aircraft. This Dove activity may have long-range implications for future foreign-aircraft sales in this country particularly those of jet aircraft, and it is being handled accordingly.

Organization Setup

In addition to the detailed arrangements being made by PAC, de Havilland has set up its own three-man staff in Linden. This group includes Fossett, as U. S. manager, Philip Dorrington, service representative covering the aircraft, and Maurice Hatch, the engine specialist. Quarters for this three-man team have been set up in the PAC offices, conveniently located alongside the Linden Airport.

Newly-ordered Doves, sold by any of the three distributors, will be ferried from England by Fleetway, Inc., of Burbank, which organization is headed by Jack Ford. The planes are flown from Hatfield, home of de Havilland, via Prestwick, Reykjavik, Bluie West One, Goose Bay, Montreal, and New York. Longest hop is 800 miles.

On arrival in Linden the planes will be given a thorough going-over by PAC prior to delivery to the customers. In many instances PAC will handle installation of radio gear and other U. S. equipment ordered by the purchasers. A number of operators have bought Lear L-2 autopilots, omni-range equipment, etc., for Doves. Lear has made special installation drawings covering these.

The aircraft is then delivered to the U. S. purchaser. The list of purchasers

to date includes many large companies, such as Curtiss-Wright, General Tire and Rubber, Carter Oil, Leslie Irving of Irving Parachute, and Standolind Oil and Gas Company.

When one of the Dove operators, or distributors, wants spare parts PAC-Linden will supply them from the present stock. The basic stock will be kept at its quarter-million-dollar level or, if necessary, increased. Effectively the operator will have a central U. S. source of parts.

Policy Move

Fossett stressed de Havilland's selection of Pacific Airmotive as a major policy move. It allows D-H to have a central, well recognized engine-overhaul agency on the East Coast, where the planes arrive from England. Through the home office in Los Angeles the two divisions will probably handle a large portion of all business. If Dove acceptance and activities spread it will be a simple matter to open overhaul facilities in PAC's West Coast headquarters, set up additional stocks, etc.

Active head of the Dove program for PAC at Linden, under Linden manager Williams, will be M. A. Barbettini, sales manager of the East Coast activity. In his work handling PAC's flourishing civil and military engine-overhaul sales, "Dutch" Barbettini has the natural spot from which to sell Doves and coordinate the related distributor and overhaul activities.

Engine-overhaul activities will generate slowly. Approved overhaul time on the Gypsy Queen is 800 hours and is going to 1,000 hours. CAA has accepted the British Air Registration Board's overhaul figures on the 70-4, which was specially modified to meet CAA demands, and now ARB extensions automatically cover the American-operated engines.

Propeller Overhaul

Hamilton Standard Division of United Aircraft Corp., which has long worked in collaboration with de Havilland's propeller division, will handle overhaul of the three-bladed prop used on the Dove. This is a full-feathering, constant-speed prop with reversing features. The reversing circuits are not approved for U. S. use, nor is de Havilland attempting to get approval.

Fossett indicates there will be no attempt to market the Mark I Heron, with its fixed landing gear, in this country. Possibly the Mark II, with retractable gear, now in the early stage of prototype construction, will be introduced here at a later date.

Meanwhile Pacific Airmotive has a major operation keeping up with the growing engine-overhaul activities. Today the East Coast Division's work is split almost evenly between military and civil jobs, leaning slightly toward the military. The commercial business includes 123 executive-aircraft operators.

Foreign Airlines

Its airline customers include Swissair, Greek TAE, El Al Israel, North America Aerolineas Argentinas, and Aerolinee Italiane (Alitalia). These, plus military customers, keep engines rolling at a rate of about 50 per month, all Pratt & Whitney-made at this time. To handle this flow, PAC's Linden activity spreads over some 65,000 square feet of area rented from the City of Linden. Customers can fly their planes into Linden Airport and taxi to PAC's door. There excellent pilot-lounge facilities have just been completed, with lounge room keys sent to customers.

The 50,000-odd square feet of space used for active production is not set up in lines by engine-type, work being handled as it arrives on the basis of about 35 days flow time. Even though employment at Linden has nearly doubled in the past year, and is now at 275, of which some 175 are productive workers, a good-sized working backlog marks the division's operations.

NEW PIPER four-passenger transport shown in flight.

Piper Test-Flies New Twin-Stinson PA-23

PIPER Aircraft Corp. has successfully test-flown its new PA-23 Twin-Stinson (AMERICAN AVIATION, March 17), another entry in the expanding field of light twin-engine aircraft for use by executive operators and others in need of medium-speed, private air transportation. There are now more aircraft operating in this type service than there are airline transport aircraft, according to CAA Administrator Charles F. Horne.

The Twin-Stinson (see photo) is projected for production in 1953, and the price of the Lycoming-powered plane is tentatively set at $25,000. No indication of the scale of production planned is available. The previously established limit of 3500 aircraft per year (AMERICAN AVIATION, November 12, 1951) does not allow material for production of this particular aircraft, but this is a situation subject to revision.

Preliminary specifications for the Piper Twin-Stinson PA-23 are as follows:

Engines	Two Lycoming 0-290-D-2 135 hp @ 2600 rpm
Gross Weight	3,200 pounds
Empty Weight	1,950 pounds
Useful Load	1,250 pounds
Wing Span	34 feet
Wing Area	187 square feet
Wing Chord	67 inches
Length	23 feet
Height	91 inches
Prop Diameter	74 inches
Power Loading	12 pounds/hp
Wing Loading	17 pounds/square feet
Baggage Capacity	80 pounds
Fuel Capacity	72 gallons

Performance Data

Cruising Speed Sea Level*	150 mph
Stalling Speed	58 mph
Rate of Climb	1,200 feet minute
Cruising Range	720 miles
Absolute Ceiling	21,000 feet
Fuel Consumption	15 gallon/hour

* Data not yet available on cruising speed at optimum altitude.

THREE TURBOMECA PALAS booster units mounted on SNCASO's DC-3.

Turbojet Assist Ups DC-3 Performance

Sparked by Palas turbojet with 310-lb. thrust, airliner increases load capacity by almost 1,800 pounds.

TESTS by SNCASO, one of France's leading manufacturing firms, have shown that the addition of a Turbomeca Palas turbojet to the Douglas DC-3 for improved take-off power would increase its passenger-carrying potential by 1,770 pounds, or improve its single-engine rate of climb by 70 feet per minute during the critical take-off period.

Fifty Tests

For some time SNCASO has been interested in the possibilities of improving DC-3 performance by providing jet assist. After equipping a standard DC-3 with the Turbomeca Palas engine, rated at 310 pounds static thrust, (AMERICAN AVIATION, December 10, 1951) SNCASO conducted 50 tests under the supervision of the French Air Ministry to verify its theoretical conclusions. Principal findings of the tests are shown in the accompanying graphs.

The Palas engine used in the SNCASO installation is one of the small turbine engines which Continental Aviation & Engineering Corp., a subsidiary of Continental Motors Corp., has been licensed to build in the U. S. The accompanying figures are based on a Palas engine rated at 310 pounds thrust. Continental has released figures showing 330 pounds thrust for this engine and SNCASO notes that later models of the engine have been certificated under ICAO conditions at 350 pounds thrust. The more powerful engines would further improve DC-3 performance.

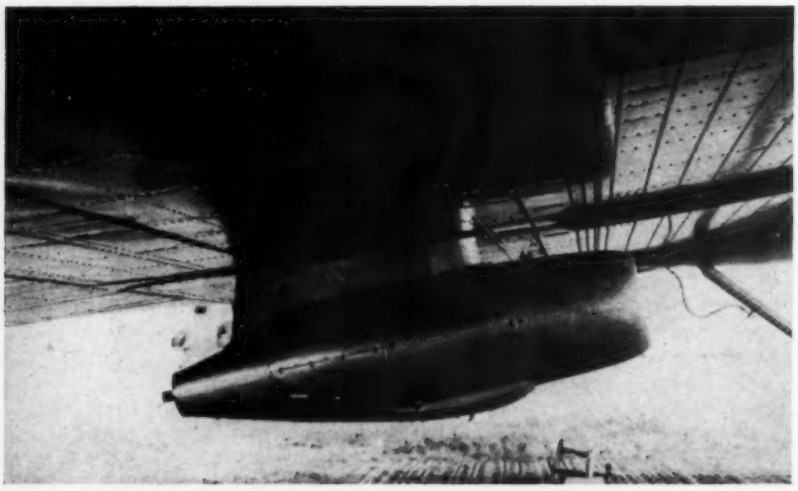
Specifications

The allowable increase in the gross operating weight of the DC-3, when equipped with a single Palas turbojet engine, ranges from 1,700 pounds to 2,200 pounds with temperature variations from 40 degrees Centigrade to 15 degrees (see top graph). As shown in the second graph, operation at high gross weights also becomes feasible at high-altitude airports with the Palas boosting normal piston-engine power. Two configurations, with single and dual Palas engine installations, are considered here. The single-engine rate of climb (third graph) also improves proportionately.

The Palas weighs 137 pounds, is 17.15 inches in diameter, and 42.4 inches long. Last reported specific fuel consumption of the engine was 1.20 pounds at take-off and 1.15 pounds per pound of thrust in continuous operation at about 264 pounds total thrust. This engine has also been proposed for use in guided missiles and target planes.

Improvements Needed

SNCASO's tests to date indicate the need for further improvements, particularly refinement of the control apparatus to insure easy starting and smooth control. This problem is now being worked on. A new series of tests is underway with the more powerful Palas engine.



THE 350-LB. THRUST from more powerful version of Palas turbojet allows operation from small, high-altitude airports.

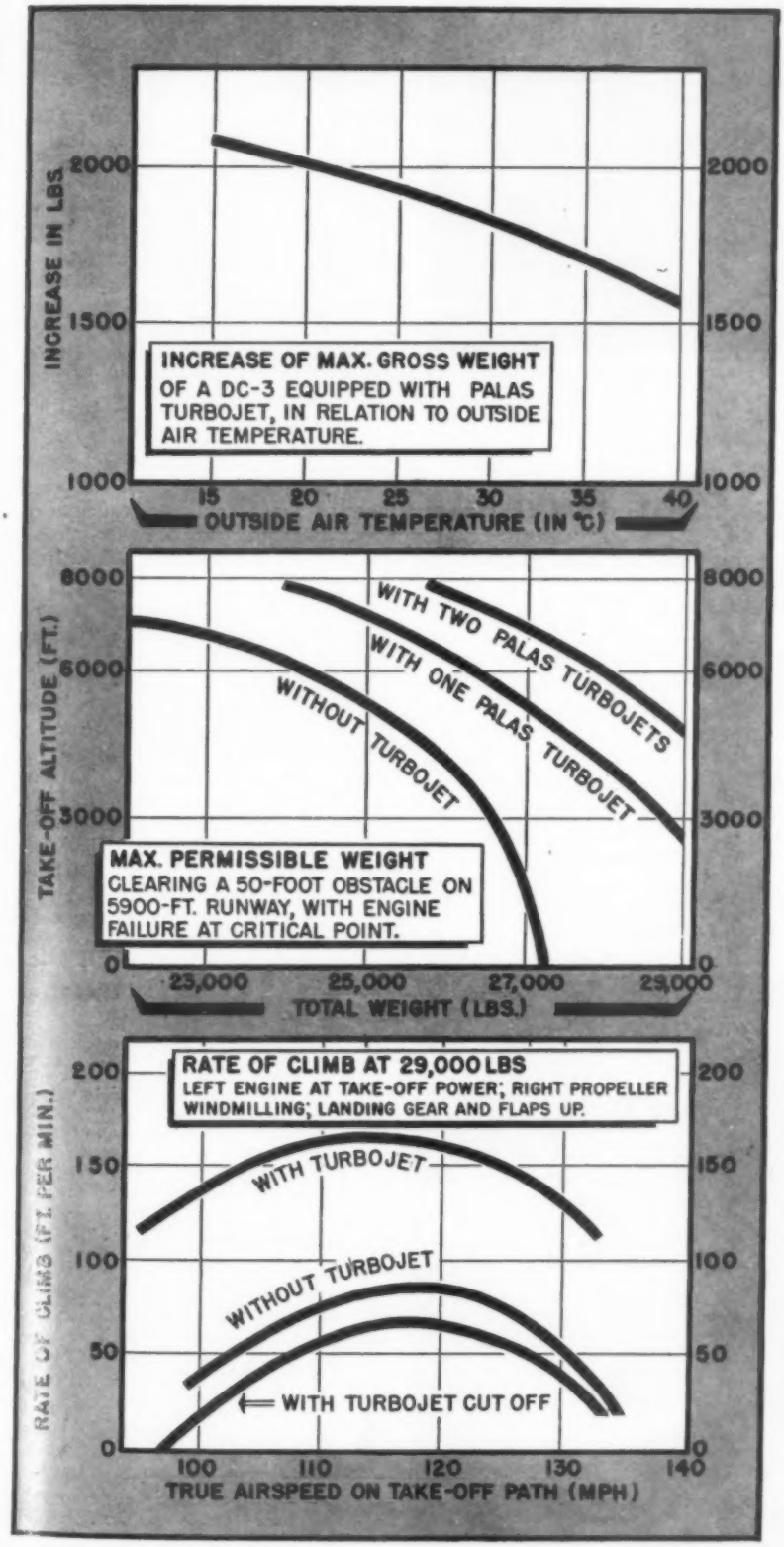
Annual Costs and Revenues

SNCASO breaks down the economic aspects of this Palas-boosted DC-3 operation in this manner:

750 take-offs per year, 3.17 gallons each	$870
Increased fuel consumption to overcome increased drag using jet installation	580
Maintenance cost estimate	870
Spare parts consumption	2,320
Amortization of unit in three years plus complete set of spares—one aircraft	11,600
Cost	$16,240
Five passengers more per trip. 1500 hours utilization per year. 112 miles per hour block speed. Six cents per passenger mile. Result: 5 x 1500 x 112 x 6 =	$50,400
Minus expenditures	16,240
Net Revenue	$34,160

Results of Palas Turbojet Tests on DC-3

giving static thrust of 310 lbs. under standard conditions



TV Tested as Landing Aid at Washington

Degree of slant visibility is being televised to control tower operators at Washington (D. C.) National Airport in a project conducted by the U. S. Weather Bureau in conjunction with the Air Navigation Development board as the first phase of a long-range investigation into the practicality of using television for helping determine runway threshold visibility, ceiling height and related data.

Conducted under terms of a $10,000 contract with DuMont Television Co., the current project calls for the televising of incoming aircraft on the instrument runway in marginal weather for one month. The slant visibility being studied is that encountered by the pilot, and reproduced by TV from the opposite direction, as an aircraft makes its approach. The visibility in this area is critical, according to Weather Bureau meteorologists, because the nature of fog formations in the approach area frequently makes the degree of visibility the pilot will encounter not apparent to control tower personnel.

Meadows Heads Airport Association

Cecil Meadows, of Bakersfield, Calif., was elected president of the American Association of Airport Executives at its annual meeting at Fort Worth, Texas.

Other officers are: first v.p., Francis Bolton, Columbus, O.; second v.p., William Fuller, Fort Worth; third v.p., David Leigh, St. Louis; secretary, Walter Betsworth, Waterloo, Iowa, retiring resident; and treasurer, Melvin Nuss, Reading, Pa.

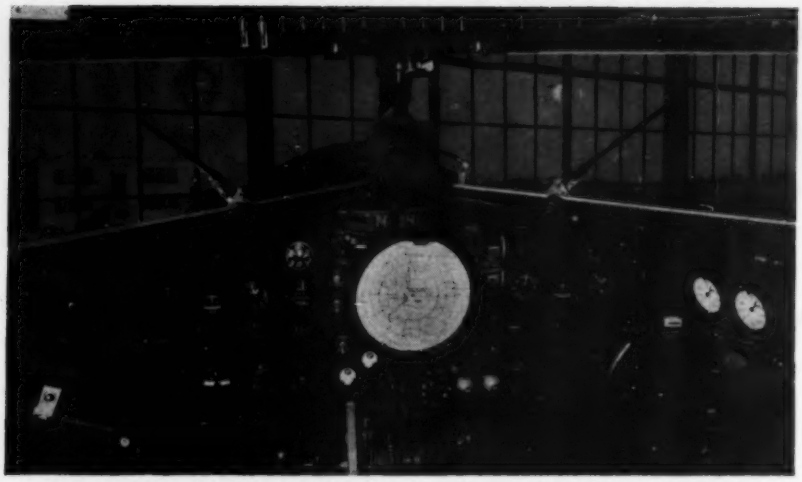
Three-year directors elected are Joseph Bastow, Oakland, Calif.; Jack Keeler, Pueblo, Colo.; and Dr. Leslie Bryan, Urbana, Ill.

Two-year directors are John Casey, Chicago; Paul A. Koonce, Houston; and Bob Neblett, Jackson, Miss.

One-year directors are Charles W. Duke, South Bend, Ind.; R. W. F. Schmidt, Tucson, Ariz.; and Emory Cox, Wichita.

Elizabethan Joins BEA

British European Airways has introduced the Elizabethan on routes between London and the continent. The two 2,500-hp Bristol Centaurus engines pull the aircraft at 250 mph and have reduced travel time 20% on its initial daily service between London and Paris. Eventually, the Elizabethan will replace the Vickers on BEA's major routes.



EXPERIMENTAL INSTALLATION of the Sperry pictorial computer in a CAA DC-3 occupies a good part of the instrument panel, but is large enough to be readily seen by both pilot and co-pilot. About eight maps would be required for planes flying the New York-Chicago airway.

Pictorial Device Helps Pilot Navigate

New CAA computer, built by Sperry, has proved to be 95% accurate during recent tests.

By Robert M. Loebelson

CIVIL Aeronautics Administration's Technical Development and Evaluation Center thinks a pilot's dream of knowing where he is at all times while in flight is near at hand. The answer, of course, is the pictorial computer, which shows the pilot his exact location on a marked map in front of him. In other words, if the pointer on the map, which represents the plane, shows him to be over a hamlet or tiny lake, he theoretically should find the hamlet or lake directly below him as he peers through the windshield.

The theory is rapidly becoming a reality. One of the TDEC's Douglas DC-3's recently was equipped with one version of the pictorial computer. This piece of equipment, built for CAA by the Sperry Corp., works in conjunction with a distance indicator also installed in the transport. When the distance-measuring equipment is operating properly and the distance indicator shows that the aircraft is *x* number of nautical miles away from the DME transmitter, the stylus or pointer which moves across the face of the map accurately points out the plane's position.

On one recent flight to test the new pictorial computer over TDEC's headquarters in Indianapolis, the unit worked perfectly about 95% of the time. The pilot and observers standing behind him could find themselves by checking the plane's location on the map with the terrain below. It was only when the DC-3 lost the signal from the DME transmitter (mainly while banking) that the pointer moved off the map and the pilot had no visual record of his position. But in each instance it took only a few seconds before the search mechanism in the plane's DME "interrogator," or receiver, picked up the signal again.

Dual Antenna

CAA officials indicate even this problem is rapidly being licked, pointing out that the Air Force has developed a dual antenna with a switch mechanism, permitting constant reception of the transmitted signal.

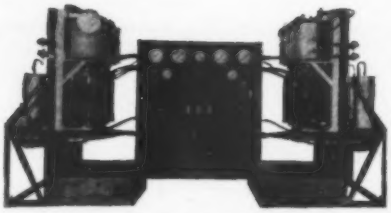
Maps used on the panel-mounted computer are specially-drawn aeronautical charts with the course to be flown plotted in advance. The pilot, by turning a crank on the lower right hand part of the computer, can arrange it so that it appears on the map as if the plane is always flying "up," regardless of the actual direction. Although CAA is now analyzing maps with four different scales (1:25,000; 1:500,000; 1:1,000,000 and 1:2,000,000) TDEC officials feel that two will probably be satisfactory for computer use, the 1:250,000 scale for local-area flights and the 1:100,000 for flights across the country.

They point out, for example, that about eight of these maps would be required for pilots flying the DME-equipped New York-Chicago Airway, the exact number depending on the scale.

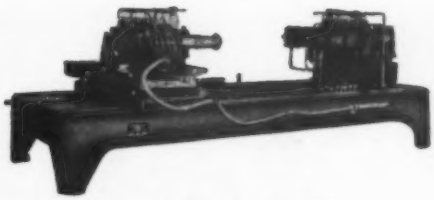
Other types of pictorial computers are also under development.

One being built by Arma Corp., Brooklyn, N. Y., will contain a 100-foot roll of photographic film showing about 700 charts and capable of covering the entire country. This film will be magnified and the pilot will thus have his choice of any area of the U. S.

PROJECT ENGINEER on the pictorial computer, L. E. Stetzer, shows the size of the lap model now under development. Lap version is designed for private planes, jet fighters, or even transports which might not have room for a panel-mounted piece of equipment of this size.

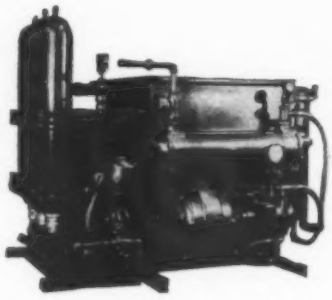


Universal Jet Fuel Nozzle Test Stand



Universal Torsional Shaft Tester

Universal Propeller Governor Tester



Rock Crusher Hydraulic Power Pack

Jet Engine Lube Pump Test Stand

Universal Magneto Test Stand

"But who tests the test equipment?"

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Not mass produced by the multi-thousands, each Greer test stand is painstakingly engineered, and is carefully tested in each stage of production for absolute accuracy. The men who design them and the men who build them have many years of specialized experience in this narrow field. It is experience that is difficult to find—perhaps impossible to match elsewhere.

In addition to standard models, many special machines have been developed to meet specific requirements. A staff of creative engineers is always available for a discussion of out-of-ordinary problems. Write or call today; no obligation.

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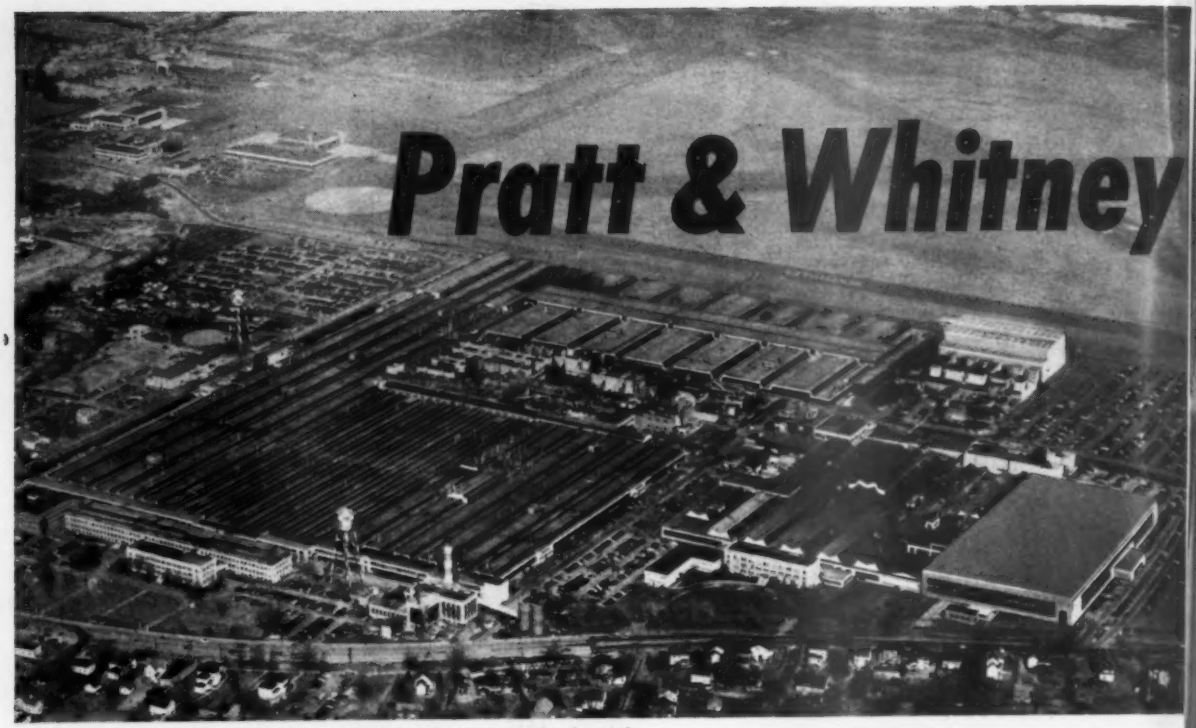
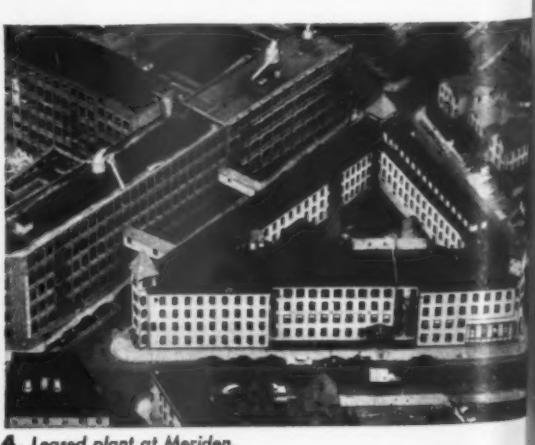


1. *Main plant at East Hartford, showing 1952 plant expansion at far right.*

2. *New North Haven plant, now under construction.*

3. *Reactivated government-owned plant at Southington.*



4. *Leased plant at Meriden.*

Aircraft Mobilizes!

More hard work lies ahead, but we are winning the battle to gain all-out production

IN THE months that followed the outbreak of war in Korea, Pratt & Whitney Aircraft has had to meet and solve an almost unbroken series of problems in expanding its production capacity to meet urgent requirements of National Defense.

These requirements called both for tremendous expansion in the production of existing piston and jet engines, and putting into large-scale production new and advanced jet engines of our own design.

In some of these cases we have had to work out manufacturing techniques unlike any we have ever used before. More of everything has been needed. We needed more floor space, more manpower, more materials and more machine tools. All of these things have been increasingly difficult to get.

But here is what has been done.

Within the last 12 months we have made provisions for almost 1,000,000 square feet of added company-owned manufacturing space. Our main plant in East Hartford will be larger by almost a third when we have expanded and occupied the present Hamilton Standard plant next door, and we are well along on the construction of a 500,000 square-foot plant at North Haven. In addition we have reactivated a large government-owned plant of more than 500,000 square feet at Southington, and leased a sizable plant at Meriden as well as several other smaller buildings. This will bring our total manufacturing space, excluding test cells and office areas, to about three and a half million square feet. Our employment has steadily gone up from 18,000 to some 26,000 people.

Throughout this period of readjustment, of tooling up, of new construction and of moving whole departments, we have somehow kept production rolling—and expanding. Beyond this, of course, we have made provision for additional output, both by expanding our system of subcontracting and by licensing Ford, Chrysler and Nash to build our engines.

There is still much to be done—but we are trying as hard as we know how to live up to our responsibilities to the defense effort.

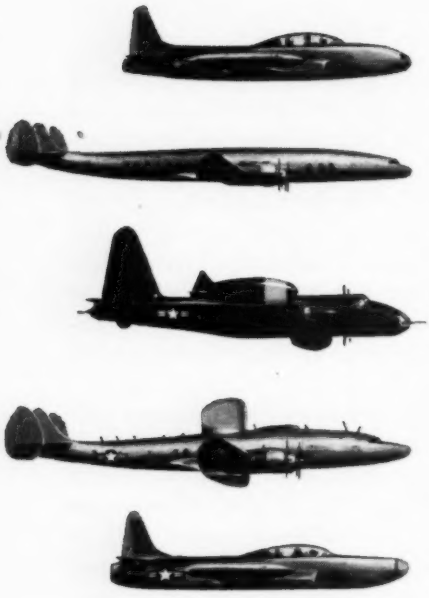
Pratt & Whitney Aircraft

PRATT & WHITNEY AIRCRAFT · DEPENDABLE ENGINES

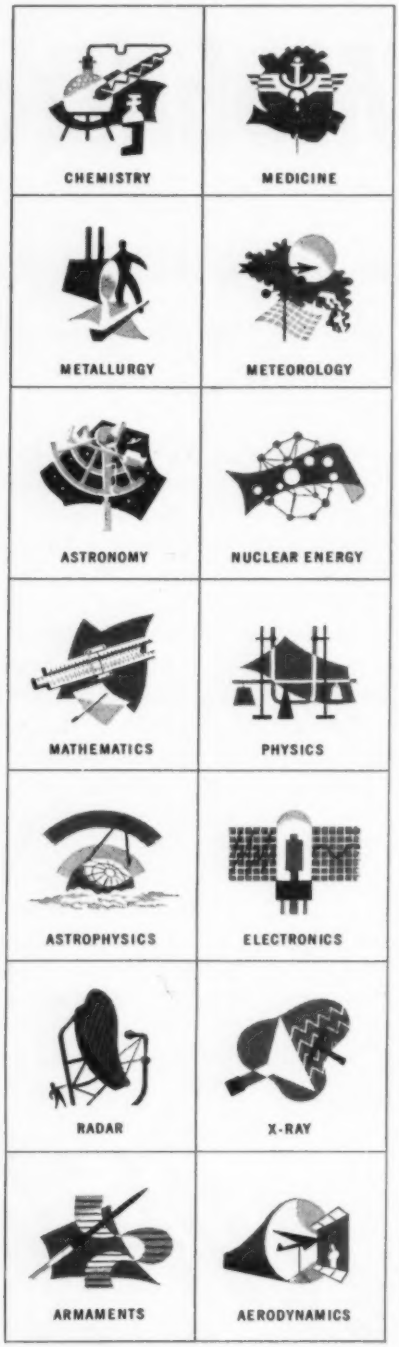
ONE OF THE FOUR DIVISIONS OF
UNITED AIRCRAFT CORPORATION

MAIN OFFICE AND PLANT: EAST HARTFORD, CONNECTICUT • BRANCH PLANTS: NORTH HAVEN, SOUTHINGTON AND MERIDEN

Leadership demands constant achievement



T-33 JET TRAINER
SUPER CONSTELLATION
P2V NEPTUNE
MILITARY CONSTELLATION
F-94 STARFIRE



Nearly every science known to man ...

insures dependability and advanced design in Lockheed planes

AIRCRAFT DESIGNING and construction are *precise* sciences. That's why Lockheed Engineering has more departments than a big university.

Lockheed's several thousand scientist-engineers work on more than 150 major projects—to build the utmost *precision* and *dependability* into Lockheed aircraft.

LOCKHEED'S ENGINEERS must have all the right answers for each vital part of every airplane. Will it stand heat, cold, tropical damp, corrosion, sand, dust, stress, strain, torque—and exactly how much? Can it be made lighter, stronger, smaller, simpler, more economical, better in any way? If the right metal doesn't exist, Lockheed scientists develop one. If a new machine is needed, Lockheed engineers invent one. There's always a new problem, because Lockheed is always looking for a better method—always building better aircraft.

TRAINING FOR SCIENTIST-ENGINEERS
For information about Lockheed's on-job training, write: Engineering Section, Employment Dept., Lockheed, Burbank, Calif.

Lockheed
Aircraft Corporation
BURBANK, CALIFORNIA, AND MARIETTA, GEORGIA

Look to Lockheed for Leadership

Lockheed

EXPANDS AIRCRAFT RESEARCH CENTER

As modern aircraft extend beyond sonic speeds and penetrate the outer limits of the atmosphere, new problems of design, materials, power, safety and pilot comfort arise, requiring the kind of scientific research facilities now found at Lockheed.

New buildings, providing laboratories in nearly every known science, have been added to Lockheed's Research Center in Burbank, Calif. Each building was designed for a special purpose. Each contributes to research, testing, invention or design —to help solve any new aircraft need or problem.

Lockheed's new 5-story Engineering Building, for example, houses a streamlined science headquarters, where engineers delve into such subjects as atomic research, pilotless aircraft, jet transports and advanced supersonic fighters.

SCIENCE CENTER

Lockheed advanced blueprints go to work in the new Research Center, which includes an aerodynamics laboratory, testing laboratory, wind tunnel, electronics laboratory, weather laboratory, chemistry laboratory and hydraulics laboratory. Here, meteorologists check the effects of every kind of weather on every vital plane part—shooting Sahara sand into engine bearings, growing tropical fungus on wiring, building Arctic ice on leading edges. These, and hundreds of other scientific tests, result in greater dependability in Lockheed planes.

Another advanced building at Lockheed is the massive Hall of Giants, which contains the nation's largest industrial equipment for building aircraft.

The new designs and methods which are developed almost daily at Lockheed are necessarily classified today. When they can be talked about, they will go down in history along with the many other Lockheed engineering firsts.

Extra Section

By William D. Perreault

EMERGENCY exists on two Martin 2-0-2 aircraft have been lost during flight recently, both cases the work of curious passengers who turned the exit handles to see what would happen. In one case the passenger couldn't read English and made the move quite ignorant of the consequences. In the other case a TWA passenger, a soldier, read the sign and simply decided to see for himself. TWA's loss was while flying at 6,000 feet near Burgettstown, Pa. TWA's district manager **L. F. Koster** was quoted by Martin as saying "We never lost one before, so nobody ever thought of keeping a spare."

•

The newly announced Civil Reserve Air Fleet plan should stimulate airline training in virtually all categories to a level approaching that of World War II. The training departments in the airlines—training mechanics, pilots, radio operators, flight engineers, and others—are an important segment of the industry about which very little is heard but which, in times of need, is always ready to meet the challenge.

•

Eclipse-Pioneer has dropped us a note indicating that the military services have officially adopted the name "A. C. Generator" in place of "alternator," the word used to describe the alternating current generators which have come into such widespread use in the post-war period. Items such as this always come up at this time of year as AMERICAN AVIATION prepares its bi-annual World-Wide Directory, now going to press.

•

There's a report going around the industry that the airline pilots are considering a strong recommendation that all aircraft generators and alternators be equipped with emergency disconnects as an additional safety feature. Pan American World Airways uses such a disconnect, made by the Stratos Division of Fairchild Engine and Airplane Corp., on its Boeing Stratocruisers. A pilot-controlled, solenoid-operated lever causes a defective unit to be remotely disconnected from the engine drive.

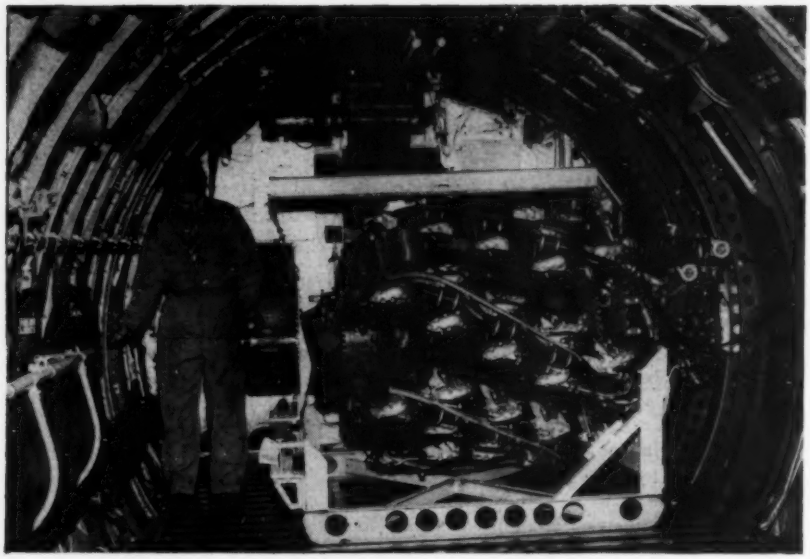
•

An improved system of flashing navigation lights has been recommended to the U. S. Navy for adoption by the USN's Aero Medical Center in Philadelphia. The AMC recommendation calls for use of simultaneous flashing of wing-tip lights at an 80-per-minute rate as contrasted with the current 40-per-minute rate. In a special test set-up demonstrated during the Aero Medical Association's convention here late last month, the new system appeared very effective.

•

Chicago & Southern Airlines makes a conscious effort to keep its maintenance personnel familiar with the cost of doing business. This has a healthy effect on the worker's handling of everyday problems and probably on his outlook on the company at large. Both in its excellent "Maintenance News" and in the company house organ the cost motive is stressed. A typical informative summary of C&S's experience with the Wright R-3350 C18BD1 engine:

Cost of one engine and accessories	$42,360
Cost of one HS 43E60 propeller	$8,000
Cost of one nacelle	$21,000
Total cost, one power unit ready to run	$71,360
Total cost of four units, one airplane	$285,440
Approved overhaul time	1400 hours
Cost of labor per overhaul	$2,000
Cost of materials per overhaul	$3,000
Total cost per overhaul	$5,000



BOEING'S NEW LIGHTWEIGHT (475 pounds) shipping stand with a Pratt & Whitney R-4360 in the cargo hold of a Boeing C-97.

Engine Dolly Cuts Shipping Weight

Engineers of Boeing Airplane Co. have joined the war on tare weight, the dead weight involved in packaging cargo for air shipment (AMERICAN AVIATION, March 3).

Boeing has now come up with a new shipping dolly for the Pratt & Whitney R-4360 Wasp Major engine, one of the major items air-shipped by Military Air Transport Service, which weighs only 475 pounds. This is a tremendous weight saving, in view of the fact that the engines are normally shipped either in pressurized steel drums which weigh 3,100 pounds without the engine, or in large wooden boxes weighing 2,100 pounds.

With either the steel drum or wooden packaging, only five Wasp Majors can be loaded aboard a Boeing C-97. With the new Boeing dolly, a C-97 can hold 10 of the engines. The lightweight dolly is fabricated entirely from parts of the standard box-type shipping stand.

The new dolly would not necessarily eliminate use of the drums or the large boxes. They could still be used for surface transportation, or for shipment to points where storage facilities are inadequate and the engines might have to spend long periods exposed to the weather. But for airplane shipment, where weight and space are at a premium, the Boeing dolly or one like it might become the shipping stand of the future. MATS cargo experts feel that, for limited storage purposes, the lightweight stand could be covered by a plastic material upon reaching its destination.

CURRENT TYPE of shipping container for the R-4360, this bulky box weighs 2,100 pounds.

Long-Term Certification Gains More Support

Growing support for long-term certification of local-service lines was evidenced again last week when CAB examiner Edward T. Stodola recommended a 10-year renewal for Robinson Airlines. Normally, local lines' certificates are valid for three- or five-year periods. But Stodola said such short terms "obviously have had an adverse affect" on the ability of the carriers to obtain suitable financing.

Previously, Board Examiner Ferdinand D. Moran urged renewal of Piedmont Aviation's certificate for 10 years. Piedmont and Robinson are considered among the more successful of the local service lines. In the Robinson case, Stodola said long-term certification, in addition to offering financing advantages, would facilitate development of a suitable local-service airplane to replace the carrier's current fleet of Douglas DC-3's.

Low-Fare Air Coach Development Urged

Certificated airlines were urged to develop the low-fare coach market by CAB Member Joseph P. Adams who pictured the future otherwise as "fraught with extremely serious consequences." Increases in traffic to meet the sharp upturn in available capacity within the next few years, Adams said, can only come from the large undeveloped mass of low-fare air coach passengers.

The Board member criticized the scheduled industry for "less than enthusiastic support" of CAB's revised coach program and also attacked other Board members as a whole for "overconfidence" in industry support. Attack was delivered in a dissenting opinion as the majority refused to reconsider its denial of non-scheduled airline certificate applications in the Transcontinental Coach-Type Service Case.

Adams said he felt CAB should grant "one or two" non-skeds limited authority to conduct route-type coach operations "to answer a real public need and answer it now, especially when the experiment can be conducted without cost to the government."

Age and Experience of Pilots

In Non-Air-Carrier Fatal Accidents During IFR Weather Conditions in 1950

Age Group	Hours Experience						
	Under 300	301-500	501-1000	1001-2000	2001-3000	Over 3000	Total
Under 20:							
In accidents	3	0	0	0	1	0	4
Number of pilots[1]	115	0	0	0	0	0	115
Rate	2.61	0	0	0	....	0	3.48
20 to 29:							
In accidents	23	4	4	2	1	1	36
Number of pilots[1]	2,133	114	140	111	42	39	2,579
Rate	1.08	3.51	2.86	1.80	2.38	2.56	1.40
30 to 39:							
In accidents	21	3	4	5	4	7	46
Number of pilots[1]	1,486	169	224	219	135	246	2,479
Rate	1.41	1.78	1.79	2.28	2.96	2.85	1.86
40 to 49:							
In accidents	13	2	3	0	1	3	23
Number of pilots[1]	514	99	103	79	54	183	1,032
Rate	2.53	2.02	2.91	0	1.85	1.64	2.23
50 to 59:							
In accidents	7	5	2	1	0	3	21
Number of pilots[1]	116	24	41	27	11	48	267
Rate	6.03	20.83	4.88	3.70	0	6.25	7.87
Over 60:							
In accidents	0	0	0	0	0	0	0
Number of pilots[1]	18	5	6	4	1	6	40
Rate	0	0	0	0	0	0	0
TOTAL:							
In accidents	71	14	13	8	7	14	127
Number of pilots[1]	4,382	411	514	440	243	522	6,512
Rate	1.62	3.41	2.53	1.82	2.88	2.68	1.95

1 *Result of CAA Medical Division sample survey.*

Why Have IFR Accidents Doubled?

Lack of instrument know-how among non-carrier pilots is largely to blame, CAB analysis reveals.

DURING 1948, approximately 13% of the fatal non-air-carrier accidents occurred in weather in which ceiling and visibility were below the minimums for VFR operation. Two years later, this proportion had more than doubled, with 134 (approximately 34%) of 495 such accidents occurring under these conditions.

Situation Worse

With the situation apparently worsening with the passage of time, an analysis of accidents under IFR conditions has been prepared by Edward B. Heyl, chief of CAB's statistical analysis section. He looked particularly into whether these accidents happened during legitimate instrument operations. His survey contained the following salient facts:

• **Only four of the 134 pilots involved** in the accidents were on IFR clearances. One of these pilots, who did not have an instrument rating, had planned a long overseas flight knowing his destination had no lights and that the radio facility available would be turned off at sundown prior to his estimated time of arrival. He struck a mountain while letting down about 40 miles off course.

• **Twenty-five pilots were on VFR** flight plans, and the remaining 105 had no flight plans or clearances of any sort.

• **Eleven of the 134 pilots held instrument ratings.** Three of these were on instrument clearances, and their accidents were attributed to improper instrument operation. Of the other eight instrument-rated pilots, four were on airways and should have had instrument clearances, while the other four, off airways, did not need instrument clearances. Evidence indicates that one of the pilots flying on an airway tried to let down through the overcast in an aircraft not equipped for instrument flight, lost control, and dived into the ground.

• **Two other instrument-rated pilots** flew into mountains.

• **One pilot had not checked weather.** After encountering a cold front with excessive turbulence, he tried to get a clearance, but before it was received, a structural failure occurred.

• **One pilot crashed while attempting to take off with ice** on wings and tail surfaces. IFR conditions did not contribute to this accident.

Heyl's statistical survey states that 55 of the 134 pilots lost control of their aircraft, with the result that 13 aircraft were pulled apart in the air, and 42 aircraft hit the ground before recovery could be made.

Fifty-one other pilots, although in control of their aircraft, collided with mountains, trees, the ground, or water. In 14 cases, he reported, it could not be determined whether the pilot had lost control. Eleven cases involved stalls. There are three in which the aircraft are still missing, and three in which the IFR conditions were not contributory to the accident.

Sample Survey

CAA's Medical Division, in conjunction with the analysis, conducted a sample survey among the pilots involved to determine how many fell in various age and experience groups (see table). Although the survey did not determine hours flown per year for the pilots, it indicates that, with the exception of pilots under 20 years of age, the accident rate in this type of accident becomes worse as the age and experience of the pilots increase.

Conclusion of the analysis is that there has been a failure to recognize the limitations of aircraft and pilots. It states that the trouble seems to lie with the experienced pilot who is not instrument-rated, yet who feels that because of his experience he can fly for short periods on instruments. The analysis notes a tendency among pilots to adopt as their own weather minimums the legal minimums set by the Civil Air Regulations. It all adds up to the fact that though it is legal to make such a flight, it may not be safe.

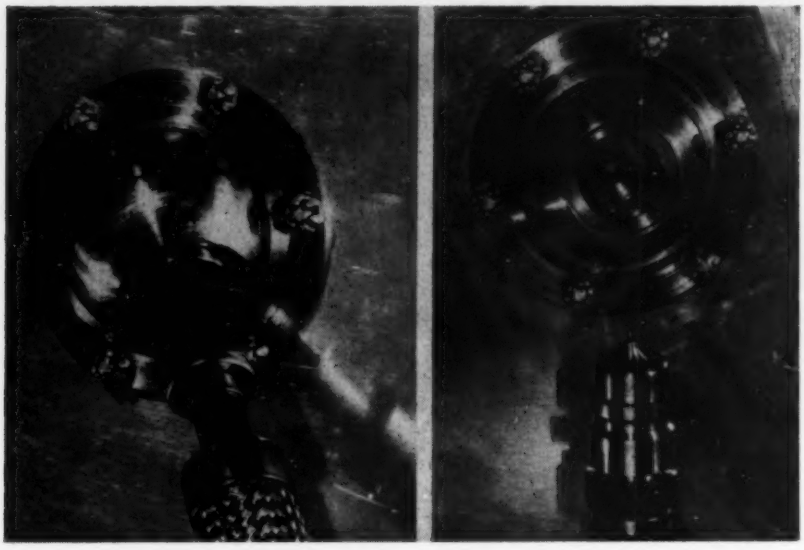
British Approach Aid

The British have developed, for small airfields, the Ecko Approach Aid, similar to GCA but only one-twentieth the cost.

Designed by engineers of E. K. Cole, the system works as follows: as an aircraft approaches the field and calls the tower on radio, its bearing is identified on VHF Direction Finder. This bearing is used to pick up the aircraft on a simple radar screen, the beam of which has a 1-mile range.

Ecko does not need to be sited at the end of the runway, since the operator's directions can be offset to apply to any runway on the airfield.

Maintenance Bulletin Board



New Fuel Line Coupling under development at CAA's Technical Development and Evaluation Center is a swivel-type arranged so that a 12-pound pull on the fuel line from any angle up to 55 degrees will jerk it free and seal off the flow of fuel to prevent the spread of fire.

Time Device Cuts CAP Heater Overhaul Costs

Installation of time mechanisms in the electrical circuits of the Janitrol combustion heater on Lockheed Constellations promises to cut Capital Airlines' heater overhaul costs by at least 30%. Throughout the winter months, when heater utilization should be at its peak, the timers recorded heater operation only about two-thirds of the aircraft operating time.

Previously heaters were overhauled every 1,000 hours aircraft operating time. Now heaters will be overhauled every 1,000 hours actual operating time of the heater, a realistic approach.

Capital is using a timer manufactured by John W. Hobbs Corp. of Springfield, Ill., which costs about $20. It is an electrical clock operating on 24 volts direct current and capable of recording up to 1,000 hours operation. Whenever the heater fuel pump is energized, an indication the heaters are operating, the clock is also energized.

To keep track of the operation Capital made up cards which are attached to the regular inspection forms. CAP inspectors check and record the elapsed time during regular inspections and the cards then go to the records section for handling.

American Solves DC-6B Outer Window Damage

American Airlines has been experiencing damage to the outer panels of the DC-6B cabin windows which puts them beyond repair. Numerous window replacements have been required and trouble traced to Turco cleaners used on the nacelles and cowling. Not thoroughly rinsed or dried prior to starting the engines, the Turco cleaner has been blown back across the panels, resulting in damage. American has urged its maintenance personnel to use particular caution in eliminating this difficulty by seeing that proper rinsing is accomplished and raw fluid removed prior to cowling installation.

POA Staff Retained at Douglas Overhaul Base

The entire staff of some 175 at Pacific Overseas Airlines' aircraft maintenance and overhaul base at International Airport, Ontario, Calif., will be retained by Douglas Aircraft Co., according to L. A. Carter, vice president-general manager Douglas Santa Monica Division, when Douglas takes over the base this month on a two-year lease, with options for renewal extending through March, 1961.

The 75,000 square-foot base, which includes hangar space, machinery, tools, rolling stock, and office equipment, will be used to perform heavy maintenance work for the Navy on four-engined R6D Liftmasters, in addition to other Douglas aircraft.

Employment at the Ontario base is expected to increase eventually to between 300 to 400, with a $1,000,000 payroll in the offing.

J. T. Caswell, vice president-general manager for Pacific Overseas, will be base manager.

PAA-AOA Integration Stay Partially Lifted

The stay of an order which imposed certain integration conditions on employes of Pan American and American Overseas Airlines has been lifted by CAB insofar as it was applicable to flight engineers, mechanics, and flight service personnel. Portions of the November 27, 1951, action relating to integration of seniority lists of pilots remain ineffective under the original stay pending arbitration of the dispute in accordance with provisions of the Railway Labor Act.

Although National Mediation Board intervention caused the initial stay action on January 14, it turned out that the NMB action was limited only to the pilots' dispute and did not affect the other groups.

Shockproof Electron Tubes Produced

Thirty new long-life electron tubes which will operate despite shock of gunfire have been produced under a Navy Bureau of Ships Project in cooperation with the Army and Air Force, with the development work carried out by Aeronautical Radio, Inc., Washington, D. C. The tubes are for military use in radio, radar, sonar, navigation and fire control instruments. Another 50 tubes are in various stages of research and development.

The tubes are of standard type and can be used for commercial equipment as well as military. They are subjected to tests that would cause immediate failure in most present day tubes. While they cost five to ten times as much as present commercial types initially, total costs will be reduced because of low replacement rate.

CAA Directives

Douglas DC-3's

CAA has established the following inspections and rework to the center wing lower skin attach angles and doublers of all DC-3 and C-47 aircraft. These are supplementary to those established in earlier directive 52-6:

(1) Airplanes having between 16,000 and 36,000 hours total time shall have the center wing rework accomplished per Douglas Drawing 5406787 or approved equivalent at the next major overhaul period, not to exceed a total airplane time of 38,000 hours.

(2) Unreworked airplanes, at or over 36,000 hours total time, shall have the center wing rework accomplished within the next 2,000 hours.

(3) When the rework shown on Douglas Drawing 5406787 or approved equivalent has been accomplished the center wing shall be subject to the same inspection and rework time schedule as established for the outer wing with heavy doublers in AD Note 39-24-1.

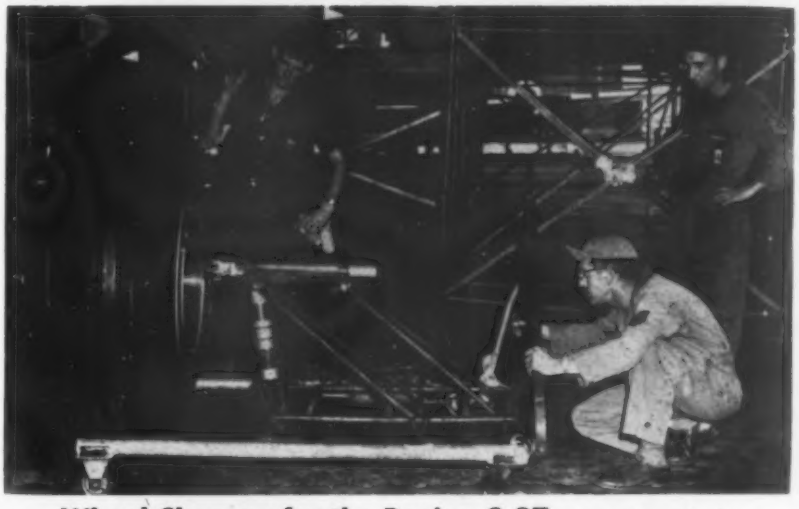
(4) All aircraft, regardless of configuration, shall have a careful external inspection of the center wing angle and skin at intervals presently established by Part A.1 of AD Note 39-24-1 for attach angles.

Also revised was earlier AD Note 39-24-1 covering all DC-3's and C-47's:

(1) Revise the text of Part A.3: "Center section skin in outer wing joint at lower center spar. Inspect the center section lower surface skin (5003151-130 and 133) in the region of the center spar for cracks in the skin which is formed around the attach angle at the outer wing joint. The cracks usually occur in the vertical flange of the skin just above the attach angle bolt holes and along the inboard line of rivets that tie the attach angles to the skin. Inspection should be made at the same intervals of time as for the wing doubles, which is outlined above.

Curtiss C-46

Revising AD Note 51-29-2, CAA deleted the figure -5 in the Part number so that it reads "20-310-1033" and also added "In view of the unavailability of parts and controlled inspection procedures under which satisfactory operation has existed, it will be considered satisfactory to operate the aircraft with a cracked fitting under the following procedure until further notice. Inspect at periodic intervals, not to exceed 150 hours, with approximately an eight-power magnifying glass or dye penetrant or any equivalent method. If cracks extend beyond the bolt hole, either through or around the hole, the fitting must be replaced."



Wheel Changer for the Boeing C-97, sister-ship of the Boeing Stratocruiser, was designed by USAF T/Sgt. Roy Miller of Waynesville, N. C. Unit simplifies wheel changing at the 1266th Air Transport Squadron of Pacific Division Military Air Transport Service. Working in his spare time, Miller built the wheel changer in one month.

Tool Eases Connie Window Replacement

An instructor in air conditioning systems at Capital Airlines, Al Bobel, has designed a tool which simplifies replacement of cabin windows in the Lockheed Constellation. Bobel's method makes it unnecessary to pressurize the cabin, thus making it possible to do the work in the hangar without running engines.

A circular metal plate which fits over the outside of the Connie window is used with this method. Sponge rubber around the plate seals the unit against the window and vacuum is applied inside the plate through a fitting. Another vent hole applies the same vacuum between the inner and outer window panels thus equalizing pressure on both sides of the outer panel as required before the window can be removed.

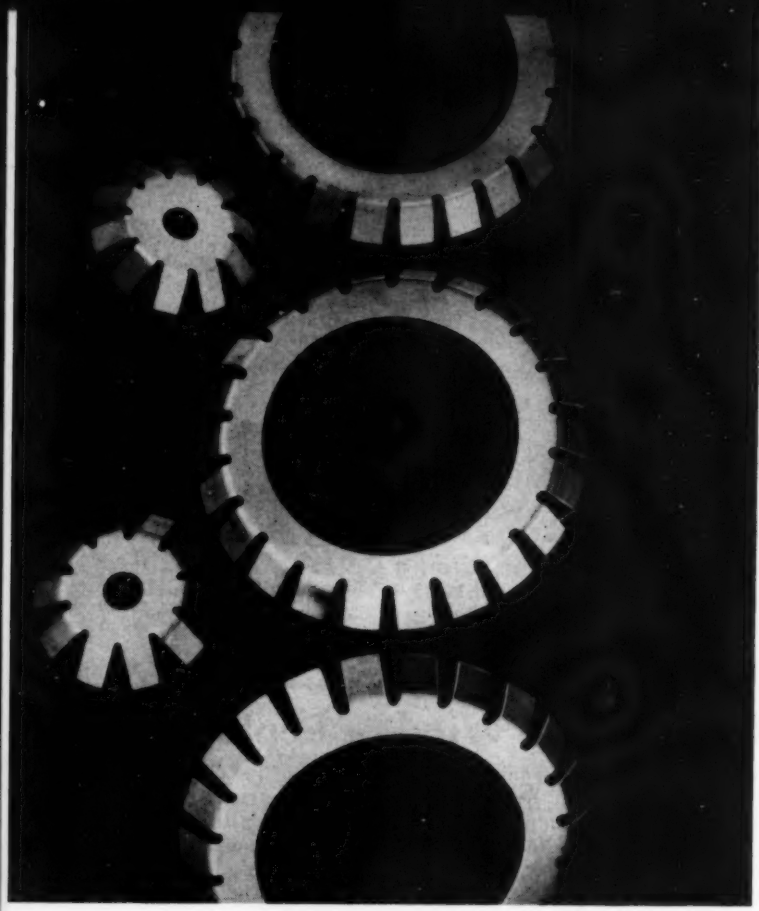
Daily Plane Utilization

International

		Nov.	Dec.
American	4 eng. pass.	5:10	5:13
	cargo	2:09	4:46
Braniff	4 eng. pass.	8:04	7:42
C & S	2 eng. pass.	9:00	9:19
	4 eng. pass.	8:39	8:24
Colonial	4 eng. pass.	6:04	6:19
Eastern	4 eng. pass.	9:59	10:24
National	4 eng. pass.	9:30	9:59
	cargo	4:59	4:19
Northwest	4 eng. pass.	0:09	8:42
	cargo	7:53	9:40
Panagra	2 eng. pass.	3:45	3:51
	4 eng. pass.	6:13	6:14
	cargo	:19	:52
Pan American Latin Amer.	2 eng. pass.	3:31	4:05
	4 eng. pass.	6:44	6:58
	cargo	5:23	4:58
Atlantic	2 eng. pass.	:57	....
	4 eng. pass.	6:04	....
Pacific	4 eng. pass.	6:12	6:38
Alaska	4 eng. pass.	7:17	7:25
	cargo	7:52	6:22
TWA	4 eng. pass.	7:28	7:21
	cargo	3:09	3:21
United	4 eng. pass.	5:11	5:41

Local Service

		Nov.	Dec.
All American	DC-3	6:05	4:50
Bonanza	DC-3	4:24	4:18
Central	DC-3	5:41	5:55
Empire	DC-3	4:59	5:00
Frontier	DC-3	7:19	7:29
Lake Central	DC-3	5:39	4:40
	Beech Bonanza	:45	....
MCA	DC-3	5:46	5:54
Mid-West	Cessna 190	2:57	2:26
Ozark	DC-3	5:44	5:53
Piedmont	DC-3	7:45	7:53
Pioneer	DC-3	7:26	6:56
Robinson	DC-3	5:54	4:48
Southern	DC-3	6:08	6:04
Southwest	DC-3	5:56	5:37
Trans-Texas	DC-3	6:20	6:19
West Coast	DC-3	4:43	4:45
Wiggins	Cessna T-50	2:00	1:44
Wis. Central	DC-3	6:20	5:28



New line of cup expanders, designated ES-11, developed to eliminate leakage in hydraulic and pneumatic cylinders, is available from HPL Manufacturing Co., 1511 Miles Ave., Cleveland 28, O. Described as insuring positive sealing action of cup packings by exerting controlled pressure on the packing lip, the expanders help increase effective packing life and eliminate leaking due to packing shrinkage. They are available in sizes for use with all standard hydraulic and pneumatic packing diameters from 1¼ to 2⅞ inches. Fabricated of 0.010-inch-thick, specially rolled strip, the expanders are described as impervious to the effects of brine, gasoline, and alcohol.

Battery-operated tape recorder suitable for recording comments by witnesses and survivors immediately following aircraft accidents, carries its own power supply of flashlight batteries. Two hours of recording are accommodated on a re-usable five-inch reel of ¼-inch tape. Address: Amplifier Corp. of America, 398 Broadway, New York 13, N. Y.

Badge fabricating tool, utilizing a Polaroid Land Camera which can produce an identification badge in 90 seconds, has been developed by Anderson & Sons, Inc., Westfield, Mass. Parts of the kit are the camera, lights, a photo trimmer, and a press for making the badge itself. Badges are made of tarnish-proof, lightweight metal, available in a variety of colors for departmental identification. Manufacturer states that a specialist is not required ot operate the equipment. Two photos are made with each exposure, leaving one for personnel files.

New Products

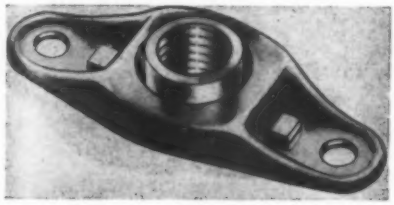
Oxygen Generator

Joy Mfg. Co. has anounced development of a semi-portable oxygen generator for industrial use. The generator is said to produce high-purity oxygen at reported savings up to 50%.

Requiring a space of 600 cubic feet, it is described as having no dependence on chemicals. It consumes nothing except air and power, producing oxygen at an operating cost of five to 10 cents per 100 cubic feet, the equivalent of $12 to $24 per ton.

Savings to the consumer come mainly from eliminating oxygen transportation. Heart of the generator is a series of automatic reversing heat exchangers which eliminate the expense of chemical purification. Program of development of the generator was aided by Dr. Samuel C. Collings, professor at Massachusetts Institute of Technology.

Address: **Joy Mfg. Co.,** Henry W. Oliver Bldg., Pittsburgh, Pa.



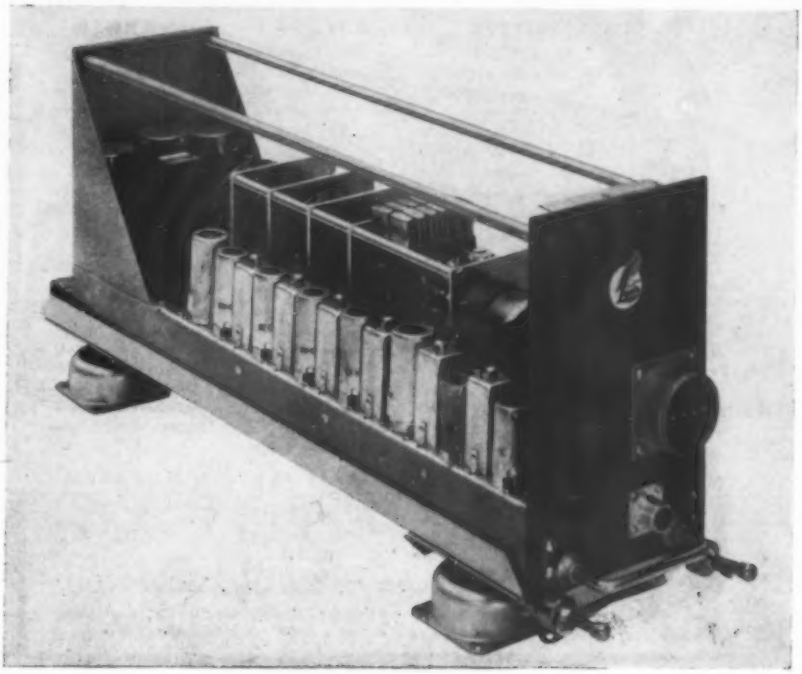
Self-Locking Nut

A lightweight self-locking nut in a floating anchor nut type, called Kaylock, is being marketed by the Kaynar Co. The new nut consists of an assembly of two parts: a threaded nut portion and a retaining shell. It provides a 1/16-inch radial movement between the nut and the anchoring portion. Both parts, spring tempered to provide for light weight, are formed of light-gauge annealed spring steel. The "float," a lateral movement between the nut and the anchored retaining shell, facilitates alignment of the nut and the bolt in assembly.

In its plan view, the new floating anchor nut is identical in outline and size to standard fixed anchor nuts of comparable thread size, permitting interchangeability. The manufacturer states that all other floating anchor nut weights are higher than the weights of corresponding fixed-nut variations. The new nut is described as lighter than its corresponding fixed anchor nut.

The Kaylock nuts are made in conformity with government lock nut specifications AN-N-10a and AN-N-5b. They provide a locking design wherein the upper threads are made elliptical and resilient, permitting all threads to carry the load and eliminating the necessity of an auxiliary locking device. To prevent galling and to decrease wear on thread surfaces, the nuts are provided with a silicone lubricant. Applied to the threads only, the lubricant, which also gives additional corrosion resistance, is described as permanent because of its adherent qualities.

Address: **Kaynar Mfg. Co., Inc.,** Kaylock Div., Engineering Dept., 820 East 16th St., Los Angeles, Calif.



New Executive Aircraft Radio

Now available from Lear, Inc., is the LVTR-18, a completely self-contained, remotely operated, two-way radio communication system for executive-type aircraft. This model was first introduced as an 18-channel, five-watt transmitter, developed by Lear to permit utilization of the additional frequencies within the range of 118.1 and 126.7 MC that were released jointly by CAA and FCC. The new unit provides a companion VHF receiver.

The LVTR-18 consists of three basic elements: a five-watt, 18-channel VHF transmitter, an 18-channel VHF receiver, and an illuminated remote frequency-selector switch to be mounted on the instrument panel. Transmitter and receiver are combined in a shock-mounted, ½ ATR rack-sized package. The over-all outside dimensions, less the shock mount, are 19⅝ inches, by 4 15/16 inches, by 6¼ inches. Total weight, less than 17 pounds.

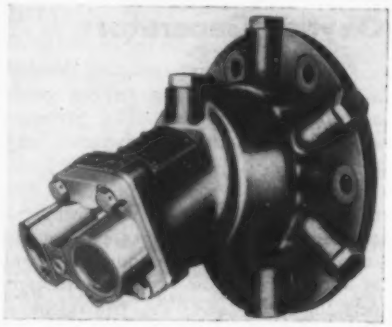
Feature of the unit is that it permits radio transmissions and reception automatically on the same frequency with a single pressing of the selector. This is accomplished by pressing and releasing the microphone button. Complete package sells for about $795, without crystals and accessories. The VHF transmitter can be purchased without the receiver for approximately $395, crystals and accessories not included.

Address: **Lear, Inc.,** LearCal Div., 11916 West Pico Blvd., Los Angeles 64, Calif.

Vickers Pumps

Now being produced by Vickers, Inc., are three new, AN-approved, fixed-displacement pump designs. Identified as PFA2, PFA3Y-2, and PFA3Z-2, they are the two- and three-gallon sizes at 1,500 rpm. Latter two models differ

only in the type of mounting pad provided. Volumetric efficiency of the pumps, which increases as pressure is reduced, is 96% and overall efficiency is 92%. The pumps are rated at 3,000



psi. Small size and high horsepower-to-weight ratio at rated loads and speeds are cited as important characteristics of the pumps. The PFA2, for instance, generates 1.9 horsepower per pound of weight. A new metered valve plate makes possible negligible pressure pulsations.

Design life of the AN pumps is uprated about 40% over older models. The AN-approved pumps were designed with straight-thread female tubing fittings per specification AND-10050. To make the new pumps interchangeable with older models, they can be fitted with special valve plates having different fittings.

Address: **Vickers, Inc.,** 1,400 Oakman Blvd., Detroit 32, Mich.

Tape Chopper

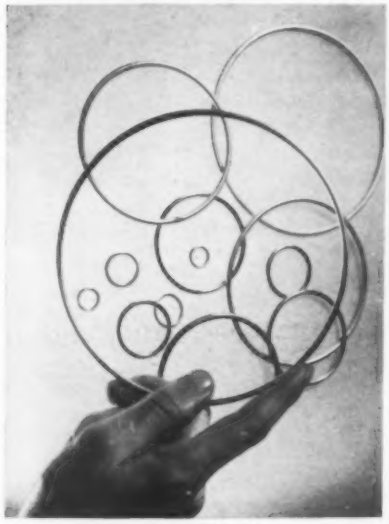
A dispenser selling for $4.75 for use with pressure-sensitive packaging tapes has been developed by R. E. Ashmun Co. For cutting the tape, it incorporates a V-blade moving on an axle. The dispenser, designated Tape Chopper Model No. 1, serves best, according to the manufacturer, with acetate fiber, paper flatback, or cloth tapes from two to three inches in width on the standard three-inch core.

Address: **R. E. Ashmun Co.,** 417 MacArthur Ave., Redwood City, Calif.

Foam Seat

In this seat, the Aerotherm Corp., Bantam, Mass., is using a new product called Aircraft-Texfoam, made in a patented process of impregnating resilient animal hair fiber with latex foam. The Sponge Rubber Products Co., manufacturer of the product, claims that the new cushioning material features lighter weight, greater lateral stability, and increased tensile strength, while retaining cushioning qualities of the company's standard Texfoam.

Address: **The Sponge Rubber Products Co.,** Shelton, Conn.



Gas-Filled Rings

UAP/WILLS Metallic O-Rings, hollow metal tubing rings filled with inert gas at 600 psi, giving positive metal-to-metal static seals wherever problems of heat, pressure, corrosive liquids, or gases are involved, have been announced by United Aircraft Products.

The rings are described as dimensionally stable under heat or cold, are not affected by age, and are impervious to oils, gases, or aromatic mixtures. The rings can be installed in present ring grooves, in free machine recesses, or, with a special compression-limiting device which can be incorporated in the rings, can be installed without grooves or recesses. They will hold against pressures as high as 20,000 psi and withstand temperatures limited only by the "physicals" of the metal.

Standard rings of stainless steel, or of mild steel if cadmium or nickel-plated, are available now in experimental quantities in sizes ranging from 11/16" to 40" OD, in increments of 1/16". Production equipment installations now going on at UAP will make rings generally available in the near future.

Address: **United Aircraft Products,** Inc., 1116 Bolander Ave., Dayton 1, O.

Molded Rubber Bonded to Ceramics

Announced by the Andrews-Alderfer Co. is the availability of molded rubber shapes bonded to any ferrous or nonferrous metal component or to various ceramic compositions. A wide variety of sizes and shapes can be produced for application in processing equipment such as control valves, electrical control devices, conveyors, heat treating equipment, electrical switches contacts, controllers, etc.

Rubber used is natural or reclaimed and such synthetics as Buna S, Buna N, Neoprene, Butyl, and Thiokol. These parts can be supplied having tensile strengths ranging from 500 to 3,500 psi. Durometer hardness can range from 30 to 100 and elongation from 50 to 900 per cent. Rubber bonded to metal parts can be furnished which will remain stable upon exposure to temperatures from —75 to 200 degrees F. Stocks featuring maximum resistance to abrasion, weathering, and various chemicals can be used in the production of parts requiring these properties.

Address: **The Anderson-Alderfer Co.,** 1017 Home Ave., Akron 10, O.

"V" Packing

A new, continuous, chevron-type packing designed for 500-600 psi and available in styles for either high- or low-temperature operation has been announced by the Flexrock Co. Known as Flexrock "Continuous-Vee" Packing, it is furnished in sizes from ½ inch to one inch by $\frac{1}{16}$ inch increments, 25 feet per spiral.

The user cuts his own rings on the job to meet specific rod and stuffing

box dimensions. Thus, for a given packing size, the "Continuous-Vee" eliminates the need for stocking a number of different sets of "V" packing.

The packing is offered in two styles: No. 2005 is constructed of asbestos cloth and neoprene and is recommended for high-temperature service on reciprocating steam or air rods, hot oil pumps, etc. No. 2008—for lower temperatures—is made of cotton duck and neoprene and is recommended for hydraulic rams, outside packed plunger pumps, etc., which handle oil or water.

Address: **Mechanical Packing Div., Flexrock Co.,** 3670-B Cuthbert St., Philadelphia 4, Pa.

Extinguishers Packaged for Installation

"Packaged" automatic carbon dioxide fire extinguishing systems for installation by the customer are being marketed by Walter Kidde, Inc. Components of the smallest Standard Pak system are shown spread out in the photo above.

One pressurized 50-pound cylinder of carbon dioxide supplies both the extinguishing agent and the power for the system. Inset shows the automatic control head featured on all the new packaged systems. Manufacturer states that substantial savings over the cost of custom-engineered and -installed systems result from the installation of the Standard Pak systems by an industrial concern's own employes.

Address: **Walter Kidde, Inc.,** 675 Main St., Belleville 9, N. J.

Hand Lamp

An electric hand lamp featuring a hermetically sealed beam excluding dirt and moisture from the mirrored surface of the reflector has been announced by U-C Light Manufacturing Co.

Known as Big Beam-Sealed Beam, Model No. 166, the light is powered by one standard 6-volt lantern battery. The four-inch lamphead and handle are chrome finished. Battery case with

hinged cover, made of 20-gauge steel, is weatherproofed and rustproof, according to the manufacturer, and is finished in red baked enamel. List price is $7.50 less battery.

Address: **U-C Light Manufacturing Co.,** 1050 West Hubbard St., Chicago 22, Ill.

Steam Cleaner

Available from Topper Equipment Co. is a heavy-duty steam cleaning machine, designated Circo Vapor Steam Cleaner (model 120). A fully automatic safety-protected system permits one-man operation and accelerates the cleaning process. When a switch is snapped on, a spark is generated which ignites the burner and puts the machine into action. From this point on, automatic controls maintain the operation at peak.

A mechanical outside safety valve is provided as a check on the electrical limit switch and by-pass valve. Heating coils are protected by a special control which stops the entire unit should the water supply fail or become inadequate, obviating possibility of burning out the heating coils. Electrical system is protected by an overload switch.

Mixing operation takes place within the unit, the dry compound being placed in the tank and emerging as a supersaturated jet of steam.

Address: **Topper Equipment Co.,** Matawan, N. J.

Standby Light

New automatic standby light with glass jar rechargeable battery and visible ball-float hydrometer is being marketed by Carpenter Mfg. Co. Battery has heavy lead plates, hard-rubber separators, leak-proof terminals, and automatic filling control. Built-in trickle charger maintains specific gravity between uses. Floodlights or sealed-beam lamp heads are available. Lamp heads are removable.

Address: **Carpenter Mfg. Co.,** Boston 45, Mass.

ENJOYING ONE OF THE sales meeting skits are, left to right, S. A. Stewart, C&S president; G. W. Davidson, sales manager, and John Fitzmaurice, sales representative Memphis. At far right is John Shad, gen'l sales mgr.

SALES MANAGERS present a skit, "If I Were King," showing how they would behave in top management positions. Signs around their necks carry names of various company officials.

How C&S Revitalized Annual Sales Meeting

Management takes back seat for field staff, resulting in shorter sessions and more discussion.

A NEW TECHNIQUE in airline annual sales conferences—making the men in the field responsible for the planning and conduct of the meeting, while management takes a back seat—has been tried with outstanding success by Chicago and Southern Air Lines.

The C&S district sales managers took over the company's recent annual sales meeting, streamlined it, presented their ideas, and allowed plenty of time for discussion of their problems. They chopped the usual three-day session down to one day and an evening.

This was a considerable departure from the past, when management planned the conference, directed it, and did most of the talking, while field men sat back and listened. The latter felt that their questions were answered hurriedly, that most of them were tabled for later discussion, and that they were sometimes forgotten.

Topic List

This year, however, John J. Shad, general sales manager, put it up to the field men: how would they like to see the conference conducted? Response was overwhelmingly in favor of a streamlined meeting, with time for clearing the deck of the many questions in the minds of the field men.

Shad divided the C&S system into two regions: northern, covering from Memphis north; southern, including cities south of Memphis plus international points. D. J. Langland, Chicago sales manager, was named northern chairman, and E. J. Bissell, Houston sales manager, headed the southern group.

Langland and Bissell were given a list of topics of general interest with the suggestion that each sales manager in his territory be assigned a topic. Each man would contact every sales manager in his region before preparing the talk, and when he presented it he would be representing the thinking of everyone.

Original plans had called for separate meetings in Chicago and Houston, but at the last minute it was decided to try for one session, one day. Houston was selected as the most convenient spot.

Agenda

Here's how the meeting was held:

Shad opened the conference at 8 a.m., outlining objectives for the year. He was followed by G. J. Keller, sales promotion and cargo director, who discussed promotions then in the planning stage. G. E. Shedd, director, and K. J. Howe, assistant director of agency and interline sales, outlined their plans. This phase consumed one hour.

The next 15 minutes were shared by T. M. Miller, vice president-traffic and sales, and George Bounds, public relations director, who reviewed the next four months' advertising program.

Another 15 minutes were allotted to J. W. Meyer, general traffic manager, in which he covered his activities.

After a 15-minute intermission, northern region sales managers took over. Their topics included:

- **How to get business from travel agents** in a competitive market.
- **Effective aircruise selling** through planned promotion.
- **Convention solicitation** as a sales tool.
- **Ways of making money** in offline offices.
- **Increased sales** through effective training and planning.
- **The sales report** as a sales tool.
- **Planning the sales day.**
- **How to develop air freight revenue.**
- **Effective window displays** and ideas for tie-ins.

Southern region managers took over in the afternoon, discussing their topics. If the same problems faced by northern managers cropped up, top management in the back row realized that some adjusting was necessary.

It was only toward the end of the afternoon that the "listening post" came to the speakers' table. Sidney Stewart, president, talked for less than five minutes on overall policy. L. E. Black, assistant general counsel, took a couple of minutes to discuss two interchange proposals. W. T. Arthur, v.p.-operations, told the group about the Convair 340's on order; T. F. Hambleton, treasurer, gave a condensed version of the 1951 annual report; W. T. Beebe, v.p.-personnel, discussed the retirement income plan.

Entertainment, Too

At the end of the afternoon came distribution of the 1952 sales quotas. The systemwide goal is $16 million in passenger, express, and freight revenue. Amount to be allotted each man had been a closely-guarded secret until the moment he was presented a Convair model mounted on an ashtray with his name and quota engraved on the base.

Northern and southern regions also conducted the entertainment session in the evening.

Frank W. Hulse
President

Tom D. Eve
V.P.-Traffic & Sales

Hugh W. Davis
V.P.-Operations

George F. Estey
Secretary-Treasurer

Southern Airways: 3 Years of Local Service

Holds seventh place among 17 lines, third in mail-ton-miles; 4 planes converted to 24-passenger seating.

By Wayne W. Parrish

IN ANOTHER two months, Southern Airways will celebrate its third anniversary. As one of the largest local-service systems in the country, it has a few things to crow about. Any new airline that can reach the 10,000-passenger-a-month level in less than three years of existence can't be passed over lightly.

Routes

Last month I flew over most of Southern's 2,117 unduplicated route miles and dropped in on its third annual sales conference at Birmingham. Southern would be the last to say that it's out of the woods financially, or over all of the operational problems coincident with setting up a large airline, but there is ample evidence that the company has come a long way since it inaugurated its first schedule between Atlanta and Memphis on June 10, 1949.

Like most local lines, it has good routes and poor ones. A few stub-end routes don't quite make sense. But Southern blankets a wide area of the southeastern United States, which is experiencing a tremendous industrial growth. Perhaps no one could have foreseen with any certainty just how the traffic flows and community of interests would work out.

Southern now has 10 DC-3's and 499 employees, serves 34 cities in eight states, flies 8,996 plane miles per day, and has seen its load factor increase from a low 9.84% for the first six months to a much-improved 27.19% for all of last year. Today it is running somewhere in the 30% bracket and expects to climb higher during the year.

With an average passenger haul of 175 miles and average revenue per passenger of $9.75, there isn't much doubt that Southern is a local carrier. It stands to benefit considerably from interline business and connects with a lot of trunk carriers throughout the system.

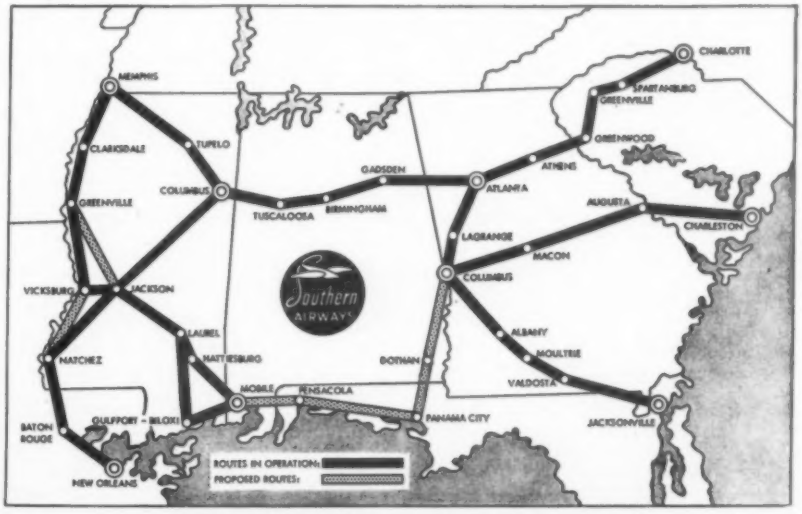
I started my Southern tour at New Orleans, taking the local stops to Memphis, where I had enough time for lunch at the airport before hopping on to Birmingham. Next day I flew to Atlanta and that evening flew Delta to Jacksonville to stay overnight so I could re-board Southern to fly back to Atlanta and on to Charlotte, where I transferred to Eastern for Washington. All I missed were the Columbus-Charleston and the Mobile-Jackson segments.

Passengers ranged from three to a dozen but what struck me most was that somebody was getting on or off at just about every stop; sometimes as many as three or four at an intermediate point. Every flight was on time. Ramp handling was fast at each stop. Like other local operators, Southern keeps one engine running except at junction points and terminals. All of the flying was first-rate.

Crews

No meals are served, not even coffee, although I'm told that hot coffee will be served on morning flights starting this fall. The system scheduling is such that there is ample meal time at Memphis and Atlanta for through passengers using those junction points.

My only criticism of Southern, which I voiced at the sales conference, was the stewardess service. Local operators as a whole have the most enthusi-



SOUTHERN'S ROUTES span the fast-changing South.

Thomas R. Foster
Director of Maintenance

Norman K. Arnold
General Sales Manager

R. W. Hunt
Manager-Traffic & Sales

Fred A. Shine
Manager-Schedules & Tariffs

astic and anxious-to-please stewardesses in the business, in my opinion, but instead of typical 'honey-chile' southern belles, which I expected, Southern had some gals who were either poorly trained or weren't picked for personality, and hadn't been told what to do. There was an exception—Marylou Arsenault—who comes from upper New York State and is a veteran of three years in flying for several lines. But Southern is hard at work putting some life into the stewardess service. A good stewardess is worth dough at the ticket counter to an airline.

Captains on my flights were E. P. Sills, W. S. Magill, C. A. Stokes, J. E. Summey, and Al Burrows (one captain and one first officer didn't have their names posted). First officers were J. E. Bean, J. E. Bass, G. C. Dixon, and F. M. Buchanon. There are 66 pilots on the seniority list, and Lou P. Speth was recently named chief pilot.

Operations

Southern has no particularly difficult operational or terrain problems and has built up a good performance factor, racking up a 99% completion factor for the summer and 98% for the winter.

Plane utilization has been running at 6:10 hours per day with one plane constantly in overhaul, or 6:51 hours counting only the nine operational planes.

Of the fleet of 10 planes, four have now been converted to 24-seat versions with a very attractive blue and grey interior. The first three rows of seats have four across, and Southern believes this is a suitable seating arrangement for its line. The new seats being installed are Burns', which Southern likes very much.

Southern has its general offices at Birmingham, but only Frank W. Hulse, the president, and Norman Arnold, general sales manager, make their headquarters there. All other offices and the maintenance base are at the municipal airport in Atlanta. Hugh W. Davis, vice president- operations, Tom D. Eve, vice president-traffic and sales, and George F. Estey, secretary-treasurer, have their offices there. Tom Foster is superintendent of maintenance and operates a very efficient base.

Engines are overhauled in Dallas and some instrument work is done outside; otherwise Southern handles all maintenance itself, and is overhauling its own airframes.

Norman Arnold and R. W. Hunt, traffic and sales manager, ran the third annual sales conference this year and believe they'll get expected sales results for the year. Over 12,000 credit cards have been issued and various contests are stimulating round-trip ticket sales. Trunk lines are cooperating and this year seven of the trunks sent representatives to the sales conference. Special efforts are made at intermediate stops from time to time to get support of the local towns for the service.

Hulse was a well-known aviation leader in the southeast long before the airline came into existence. Not only was he a big fixed-base operator for many years, but during World War II he operated three large training schools for the Air Force.

Veterans

His experience covers practically every phase of aviation—he was station manager for Delta Air Lines, airport manager of Daniel Field at Augusta, Ga., and head of Southern Airways Co., a fixed-base operation, all at the same time. He filed for his local route during the war and when the certificate was issued he gradually built up an organization of men drawn chiefly from other airlines.

Eve, who has been with Hulse since 1941, has been spending considerable time during the past year running Southern's big contract training school at Bainbridge, Ga.

Davis, active in aviation for 16 years, came to Southern in 1949, after service with Trans World Airlines, Colonial, Robinson Airlines, and CAA.

Foster, with Southern since 1947, was formerly in charge of procurement for Capital Airlines.

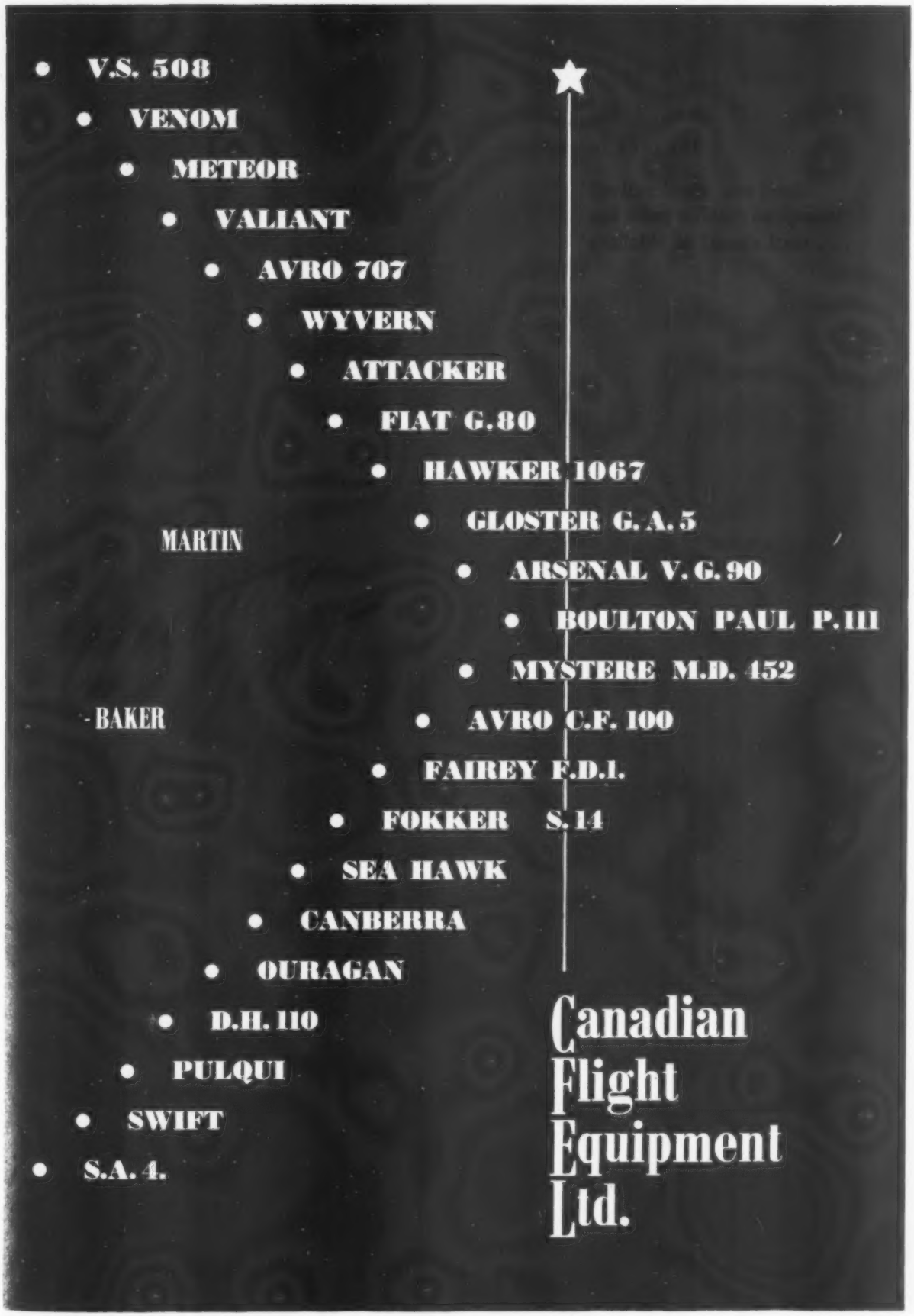
Passenger Increase

Arnold was in Eastern Air Lines' traffic department for three years and station manager for Piedmont Airlines at Charlotte, N. C., while Hunt held accounting and statistical positions with Chicago and Southern, Colonial, and Florida Airways.

Like all other lines, Southern has been hit by much higher operating costs during the past six to eight months. But the financial picture, while not reflecting a profit, has showed a constant increase of passenger revenues as against mail. During the first six months of operation, the passenger revenues amounted to only 15.7% of mail reve-

Southern's Record

	June 10-Dec. 31, 1949	1950	1951
Passenger revenue	$101,077	$360,786	$948,026
Mail revenue	642,834	1,206,238	1,626,096
Express revenue	5,748	14,670	28,993
Total Operating Revenue	750,185	1,595,092	2,625,507
Total Operating Expense	806,036	1,646,370	2,749,442
Net Operating Loss	55,851	51,277	123,935
Passenger revenue as % of mail revenue	15.7%	29.9%	58.3%


V.S. 508
VENOM
METEOR
VALIANT
AVRO 707
WYVERN
ATTACKER
FIAT G.80
HAWKER 1067
GLOSTER G.A.5
MARTIN
ARSENAL V.G.90
BOULTON PAUL P.111
MYSTERE M.D. 452
BAKER
AVRO C.F. 100
FAIREY F.D.I.
FOKKER S.14
SEA HAWK
CANBERRA
OURAGAN
D.H. 110
PULQUI
SWIFT
S.A. 4.
Canadian
Flight
Equipment
Ltd.

nue, but this figure was boosted to 58.3% in 1951. A few more seats filled on each flight would make a world of difference. Southern's mail rate started out a 80c per mile, but dropped to 50c per mile during the last three months of 1951.

Last year Southern climbed to seventh place among the 17 local-service lines in both revenue passengers and revenue-passenger-miles. But it was third in mail-ton-miles, being surpassed only by Frontier and Pioneer, and it was fifth in express-ton-miles. Southern's mail loads have turned out to be quite heavy, indicating both new industrial concerns scattered along its routes and military bases.

With further improvements to come, Southern still has a pretty creditable record for having operated less than three years. Judging from the spirit among the top personnel, Southern is determined to climb to the top in the local-airline group. It may well get there.

SUMMARY OF U.S. DOMESTIC AIRLINE TRAFFIC FOR DECEMBER, 1951

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR %	MAIL TON-MILES ***	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
American	353,531	201,582,000	284,767,000	70.79	2,072,581	862,142	3,557,363	26,158,678	38,680,383	67.63	6,463,622	6,781,122	92.92
Braniff	63,207	22,246,000	37,498,000	59.33	158,785	85,554	138,663	2,509,660	4,851,803	51.73	1,006,920	1,027,886	95.99
Capital	140,274	45,491,000	80,722,000	56.36	226,528	193,152	432,887	5,196,582	10,617,570	48.94	2,011,116	2,172,687	89.34
Caribbean	8,852	698,000	1,580,000	44.18	1,503	. . . .	3,541	61,133	148,324	41.22	57,468	57,468	100.00
C & S	36,900	13,743,000	24,833,000	55.34	70,597	67,418	94,739	1,549,364	3,026,657	51.19	755,042	799,769	92.61
Colonial	17,524	4,420,000	9,193,000	48.08	12,507	7,015	8,380	471,727	949,543	49.68	285,390	319,274	87.88
Continental	26,845	10,752,000	21,605,000	49.77	66,766	23,413	55,031	1,174,401	2,335,682	50.28	658,604	639,685	99.70
Delta	74,633	35,893,000	57,328,000	62.61	219,629	122,417	319,088	4,113,477	6,933,918	59.32	1,492,041	1,489,501	97.51
Eastern	260,936	121,608,000	199,740,000	60.88	612,499	374,881	510,983	14,131,128	28,392,266	49.77	4,793,469	4,740,633	95.75
Hawaiian	28,900	3,689,000	6,174,000	59.75	5,004	9,193	77,802	390,545	744,123	52.48	289,627	214,057	99.56
Inland*	8,890	3,579,000	5,677,000	63.04	24,711	7,207	13,481	388,195	619,875	62.62	241,680	260,090	92.28
MCA**	32,376	10,353,000	18,988,000	54.52	51,299	26,258	42,413	1,111,241	2,001,150	55.53	728,036	710,654	96.08
National	62,431	42,598,000	67,071,000	63.51	164,792	75,322	460,132	5,072,613	8,803,413	57.62	1,530,803	1,457,771	97.51
Northeast	30,615	5,972,000	10,748,000	55.56	18,177	15,988	17,463	605,718	1,074,797	56.36	356,318	409,952	83.80
Northwest	51,862	35,764,000	56,832,000	62.93	342,290	157,694	223,761	4,233,188	7,570,963	55.91	1,008,499	1,083,532	89.64
Trans-Pac.	13,664	1,660,000	3,985,000	41.66	3,034	458	3,418	129,258	351,658	36.76	142,299	122,997	98.69
TWA	156,888	122,936,000	168,682,000	72.88	1,346,580	638,591	1,356,301	15,109,590	22,603,368	66.85	4,098,865	4,563,331	86.99
United	211,568	145,831,000	205,427,000	70.99	2,436,018	847,880	1,624,812	18,867,053	30,532,370	61.79	4,927,815	5,233,604	90.22
Western*	46,810	17,615,000	28,090,000	62.71	142,073	39,546	51,376	1,914,106	2,950,118	64.88	775,963	801,475	95.91
TOTALS	1,626,706	846,430,000	1,288,940,000	65.67	7,975,373	3,554,129	8,991,634	103,187,657	173,187,981	59.58	31,623,577	32,885,438	92.41

* Operations of Western and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here.
** Figures do not include operations of local service segment (route 106) awarded MCA by CAB in the Parks Air Lines Investigation Case. Figures covering operations of route 106 are carried separately on local service airlines summary sheets.
*** Includes air parcel post.

NOTE: Figures include both scheduled and non-scheduled operations.

SUMMARY OF U.S. DOMESTIC TRAFFIC FOR CALENDAR YEAR, 1951

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR %	MAIL TON-MILES######	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE-MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
American	4,847,412	2,471,863,000	3,307,376,000	74.74	15,304,017	8,928,227	35,484,319	297,482,320	431,935,708	68.86	74,672,256	75,298,623	97.74
Braniff	776,073	271,027,000	422,206,000	64.19	1,524,427	1,037,985	1,989,402	30,483,333	54,722,197	55.71	11,831,560	11,710,391	98.20
Capital	1,951,356	615,625,000	1,016,616,000	60.56	1,981,942	2,558,911	5,280,033	68,670,412	134,884,170	50.91	25,576,057	25,739,610	96.73
Caribbean	95,772	7,664,000	16,918,000	45.30	10,715	. . . .	26,686	654,518	1,607,448	40.70	622,735	619,161	99.40
C & S	453,899	168,152,000	269,000,000	62.51	669,611	763,611	864,048	18,416,312	33,007,687	55.79	8,507,601	8,648,464	97.57
Colonial	245,434	62,424,000	116,320,000	53.67	109,613	88,651	110,761	6,495,473	12,868,426	50.48	3,851,067	3,935,709	96.52
Continental	291,385	111,787,000	210,390,000	53.13	405,016	166,282	583,749	11,851,051	22,037,484	53.78	6,955,055	6,549,491	99.60
Delta	887,224	406,507,000	609,410,000	66.71	1,743,916	1,203,375	3,598,604	45,616,475	76,627,810	59.53	16,663,976	16,439,022	98.85
Eastern	3,443,444	1,552,235,000	2,390,926,000	64.92	5,603,823	4,876,136	5,361,468	175,161,739	332,006,732	52.76	56,166,580	54,689,371	98.48
Hawaiian	343,542	44,508,000	70,592,000	63.05	36,466	98,102	831,597	4,579,074	8,643,094	52.98	3,289,749	2,582,839	99.45
Inland* #	100,517	40,760,000	68,086,000	59.87	206,446	90,555	143,838	4,346,432	7,585,001	57.30	2,816,851	3,062,350	91.87
MCA**	399,057	123,732,000	215,052,000	57.54	439,100	272,209	513,366	13,071,178	23,219,892	56.29	8,603,181	8,460,327	98.05
National	626,279	407,732,000	640,668,000	66.60	1,144,262	482,097	5,042,306	48,179,174	84,955,216	56.71	15,417,476	14,372,124	98.63
Northeast	455,261	87,694,000	144,027,000	60.89	155,703	188,776	247,413	8,602,344	14,439,859	59.57	4,743,281	4,875,994	92.94
Northwest***	715,079	473,596,000	718,117,000	65.95	2,287,710	1,778,094	3,691,176	53,580,817	93,841,774	57.10	12,461,647	13,056,657	92.93
Trans Pac.##	138,549	17,005,000	37,702,000	45.10	11,323	2,181	26,201	1,347,605	3,500,572	38.50	1,346,423	1,144,747	99.39
TWA	2,081,737	1,522,070,000	2,000,914,000	76.07	11,917,363	7,509,904	14,975,152	180,212,309	269,127,384	66.96	49,774,531	52,278,608	93.69
United###	2,846,702	1,764,416,000	2,332,864,000	75.63	18,196,968	9,881,945	22,216,445	219,298,730	347,251,809	63.15	58,352,632	59,934,612	94.72
Western* #	590,805	218,933,000	333,635,000	65.62	1,242,877	434,911	612,501	23,202,548	35,450,915	65.45	8,670,031	9,036,309	93.53
TOTALS	21,289,527	10,367,730,000	14,920,819,000	69.48	62,991,298	40,361,952	101,599,065	1,211,251,844	1,987,763,178	60.93	370,322,689	372,434,409	96.48

* Operations of Western and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here.
** Figures do not include operations of local service segment (route 106) awarded MCA by CAB in the Parks Air Lines Investigation Case. Figures covering operations of route 106 are carried separately on local service airlines summary sheets.
*** Figures reflect revisions filed by carrier from April through November.
# WAL mechanics strike from July 27 to August 12, 1951.
Carrier authorized to transport mail May 15, 1951 (Docket No. 4986).
UAL pilot strike from June 19 to June 29, 1951.
Includes air parcel post.

NOTE: Figures include both scheduled and non-scheduled operations.

Financial News

TWA reported 1951 net profit of $8,511,000 after paying income taxes of $8,888,000. Taxes were up $6,816,000 over the year before. The net income was a gain of 8.7% over adjusted net of $7,830,000 in 1950. Gross revenues were $144,912,000, increase of 23.9%.

Colonial Airlines' 1951 net profit was $76,553 against loss of $310,921 in 1950. Revenues were $6,737,178 against expenses of $6,636,503.

Braniff Airways showed 1951 net profit of $1,337,889 against adjusted net income for 1950 of $1,164,978. Gross revenues were $25,356,473 against expenses of $23,142,584.

Wisconsin Central Airlines reported 1951 net profit of $6,267 on gross revenue of $2,114,328 and expenses of $2,108,061. Net was adversely affected by non-recurring expense of converting from Lockheed Electras to DC-3's.

Southwest Airways' 1951 net income was $73,231 against $135,473 profit in 1950.

Northwest Airlines had net loss of $383,278 in February on revenues of $3,311,753 against loss of $871,129 on $2,486,114 in same month of 1951.

Mid-Continent Airlines net loss in January was $30,335 against profit of $22,120 in same 1951 month.

SUMMARY OF U.S. DOMESTIC AIRLINE REVENUES & EXPENSES FOR JANUARY, 1952

Airlines	Total Operating Revenues	Passenger Revenues	Mail Revenues	Express Revenues	Freight Revenues	Excess Baggage Revenues	Non-Scheduled Transport Rev.	Total Operating Expenses	Aircraft Operating Expenses	Ground & Indirect Expenses	Net Operating Income
American	$ 12,939,107	$ 10,972,404	$ 666,424	$ 312,133	$ 658,237	$ 120,786	$ 64,633	$ 12,069,366	$ 6,176,194	$ 5,893,172	$ 869,741
Braniff	1,544,668	1,321,010	125,523	32,961	35,167	16,150	. . . .	1,400,740	663,588	737,152	143,928
Capital	2,553,972	2,250,098	93,085	76,706	74,588	12,504	8,916	3,035,989	1,401,269	1,634,720	-482,017
Caribbean	95,711	73,955	13,257	. . . .	3,133	860	2,150	90,211	36,992	53,219	5,500
C & S	1,022,578	833,909	127,365	23,515	24,887	7,438	2,327	989,032	478,114	510,918	33,546
Colonial	391,908	265,711	80,564	3,584	3,011	1,675	615	417,764	171,112	246,652	-25,856
Continental	790,576	609,241	132,817	6,372	18,330	4,519	11,093	774,890	418,294	356,596	15,686
Delta	2,430,031	2,178,103	87,241	34,503	66,723	34,073	4,993	2,021,926	993,068	1,028,858	408,105
Eastern	8,758,072	8,067,894	221,537	134,375	112,690	153,544	45,162	7,692,232	4,144,476	3,547,756	1,065,839
Hawaiian	337,546	242,986	47,209	8,382	31,336	4,730	1,516	331,343	130,367	200,976	6,203
Inland*	251,326	232,697	10,244	2,231	3,683	2,193	. . . .	236,033	107,606	128,427	15,293
MCA**	724,693	558,106	137,868	6,819	10,173	4,319	5,279	766,001	344,360	421,641	-41,308
National	2,836,178	2,559,203	68,876	22,992	105,614	55,940	15,425	2,214,577	1,110,666	1,103,911	621,601
Northeast	419,227	297,896	101,011	8,110	7,008	1,648	652	579,287	257,543	321,744	-160,060
Northwest	2,256,988	1,834,000	236,321	48,347	62,483	16,512	2,458	2,832,257	1,468,056	1,364,201	-575,269
Trans Pacific	138,288	97,590	21,288	631	3,158	896	13,320	144,606	54,148	90,458	-6,318
TWA	7,764,010	6,613,591	485,439	235,442	251,963	62,636	1,735	7,594,681	3,989,124	3,605,557	169,329
United	9,407,922	7,659,705	787,657	288,427	359,009	71,191	92,901	8,626,241	3,780,538	4,845,703	781,681
Western*	980,820	863,465	53,979	12,735	13,322	5,103	. . . .	938,790	450,161	488,629	42,030
TOTALS	55,643,621	47,531,564	3,497,705	1,258,265	1,844,515	576,717	273,175	52,755,966	26,175,676	26,580,290	2,887,654

* Operations of Western and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here

** Figures do not include operations of local service segment (route 106) awarded MCA by CAB in the Parks Air Lines Investigation Case. Figures covering operations of route 106 are carried separately on local service airlines summary sheets.

NOTE: These figures are taken from monthly reports filed by the airlines with the Civil Aeronautics Board. The data are tentative and subject to later change.

SUMMARY OF U.S. LOCAL SERVICE AIRLINE TRAFFIC FOR JANUARY, 1952

Airlines	Revenue Passengers	Revenue Passenger Miles	Available Seat Miles	Passenger Load Factor	Mail Ton Miles	Express Ton-Miles	Freight Ton-Miles	Total Ton-Miles Rev. Traffic	Available Ton-Miles Flown	% Available Ton-Miles Used	Revenue Plane Miles	Scheduled Miles	% Scheduled Miles Completed
All Amer.	11,327	1,657,000	5,257,000	31.53	5,113	12,026	. . .	179,341	600,821	29.85	250,342	284,918	82.92
Bonanza	2,363	597,000	1,538,000	38.82	562	136	1,316	60,036	152,484	39.37	73,191	78,864	92.81
Central	3,389	478,000	2,533,000	18.87	1,844	706	1,485	42,828	288,374	14.85	120,685	123,333	94.86
Empire	3,196	665,000	2,154,000	30.87	2,815	1,408	. . .	67,543	234,397	28.82	102,559	105,834	94.95
Frontier	8,287	2,237,000	7,907,000	28.29	10,653	5,472	27,205	268,128	630,641	42.52	376,502	379,674	99.11
Lake Cent.	1,928	342,000	1,829,000	18.70	1,369	3,906	. . .	36,784	209,655	17.56	89,682	110,112	79.43
MCA*	2,787	589,000	1,589,000	38.86	1,340	2,778	2,664	60,057	168,237	35.70	70,099	83,948	82.83
Mid-West	197	29,000	237,000	12.26	677	. . .	. . .	3,071	26,039	11.79	59,180	76,322	77.54
Ozark	3,842	619,000	5,190,000	11.93	2,377	3,630	. . .	63,829	511,791	12.47	207,623	233,140	87.99
Piedmont	13,725	3,184,000	7,819,000	40.72	5,725	5,566	9,183	325,416	893,642	36.41	372,351	374,457	98.70
Pioneer	12,092	3,125,000	7,751,000	40.32	9,018	3,721	11,893	338,767	775,099	43.71	322,958	334,037	96.64
Robinson	6,602	1,081,000	2,669,000	40.50	2,737	4,916	2,830	110,644	275,211	40.20	127,815	137,058	85.63
Southern	8,847	1,509,000	5,766,000	26.17	7,116	7,319	. . .	158,934	520,869	30.51	274,575	278,876	98.37
Southwest	7,544	1,448,000	4,040,000	35.84	5,470	3,213	6,564	160,610	461,748	34.78	192,395	204,220	92.65
Trans-Texas	5,572	1,287,000	5,044,000	25.51	4,683	2,180	5,753	141,742	504,372	28.10	240,177	255,316	93.18
West Coast	4,899	738,000	2,519,000	29.30	814	802	1,428	71,221	225,762	31.82	121,911	122,326	96.11
Wiggins	178	17,000	124,000	13.71	64	115	. . .	1,683	13,066	12.88	30,998	48,910	63.38
Wis. Central	6,566	969,000	3,099,000	31.27	5,837	9,253	. . .	106,573	354,226	30.09	147,594	170,562	85.70
TOTALS	103,341	20,541,000	67,035,000	30.64	68,214	67,131	70,321	2,197,207	6,844,434	32.10	3,180,637	3,402,107	92.00
						Helicopter Mail Service							
LAS	. . .	. . . .	. . . .	. . .	2,176	. . .	. . .	2,176	4,856	44.81	26,491	28,534	92.84
Los Angeles	. . .	. . . .	. . . .	. . .	3,518	. . .	. . .	3,518	7,544	46.63	19,904	23,080	86.20

* Figures cover local service segment (route 106) awarded MCA by CAB in the Parks Air Lines Investigation Case.

NOTE: Figures include both scheduled and non-scheduled operations.

Airline Commentary

By Eric Bramley

AN EXCELLENT EXAMPLE of airline courtesy has been pointed out to us by a friend of ours. He writes as follows:

"On a recent flight out of New York on TWA, the trip was delayed about 30 minutes due to turn-around procedures. The plane was finally parked at LaGuardia well out from the ramp, directly in the propeller blast of a United DC-6, which was waiting to clear for take-off. As soon as the United pilot noticed that TWA's passengers were having trouble with the propeller blast, he reversed all props, so that everyone got aboard the Connie with hats and clothing intact.

"It was the first time in my experience that a pilot was thoughtful enough to take such action, and actually should become standard operating procedure with the airlines, what with today's crowded terminals. I feel that orchids should go to the UAL pilot, too, who did a good selling job for his airline. Many of the TWA passengers commented on his action."

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A strange, amusing, and somewhat garbled story came out of the Dominican Republic recently, and Pan American World Airways ended up in the middle. It seems that someone had an idea about operating a "gambling casino of the air" between Miami and Ciudad Trujillo. One version was that the operator would be Compania Dominicana de Aviacion (CDA), government-owned airline; another was that a private outfit would charter a plane from the airline, with government approval.

Anyway, the idea was that flights would operate out of Miami to take the suckers to the casinos in Ciudad Trujillo. The plane would be loaded with slot machines so you could be separated from some of your money on the way over. While the flight was in Miami, the slots would be in bond, to conform with the law.

It seems that PAA has a small interest, 10% or less, in CDA, and mention of the latter drew unfavorable publicity to PAA. It received protests from church groups and others who oppose gambling. PAA wants it known that it doesn't know anything about the deal, and has much more important things to do than to participate in flying gambling dens.

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A very nice tribute to Official Airline Guide (an AMERICAN AVIATION publication) is contained in Robinson Airlines' house organ, *The Air Chief*, edited by **Jeanne Cook.**

She points out that OAG has been adding quite a few new features in the last few months. She lists a few of the new, and some of the old, as follows: minimum connecting times, alphabetized coding pages, air mail rates, car rental services, international travel regulations, universal interline reservations code, latest airline news, and stop press pages for last-minute schedule and fare information.

"So you see," she adds, "your Airline Guide is more than just a book containing schedules and fares—it is the airlines' version of an encyclopedia. Familiarize yourself with it by using it. What's more, it makes interesting reading for some of those 'spare' minutes."

Them's mighty nice words. They are appreciated.

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Add to the red face department: The president of one of the largest airlines and his vice president in charge of public relations got up bright and early one morning to take a flight out of New York for Washington. But they got on a Boston flight by mistake, missed their appointment.

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Southern Airways is putting on a big drive for round-trip sales. It has set up sales quotas, with cash awards going to the high stations. To keep things going, they have instituted a penalty system for all personnel not plugging round-trips. When a person is caught not trying for a round-trip sale, he must put a coin in a jar. The money, we are extremely happy to report, is to go for subscriptions to AMERICAN AVIATION. The system was worked out by the third annual sales conference at Birmingham in March, and the AMERICAN AVIATION idea originated among the station personnel.

1951 AIRLINE SALARIES

Following are 1951 airline salaries as reported to CAB:

Trunk Carriers

Continental Airlines, Inc.

Robert F. Six, president, $33,000 salary (up $250); **Joseph A. Uhl,** v.p., secy. and treas., $14,912.52 salary (up $720.70); **C. C. West, Jr.,** v.p., $17,375.07 salary (up $1,000.07); **O. R. Haueter,** v.p.-oper., $17,375.07 salary (up $1,000.07); **Lynn H. Dennis,** v.p.-flight service, $7,083.39 salary (*); **Stanley O. Halberg,** v.p., traffic and sales, $7,437.50 salary (*); **Harry C. Short,** v.p.-eng. and maint., $7,812.60 salary; **Dorothy R. Peri,** asst. secy. $4,569.54 salary (up $294.46).

(*) Term of office began April 1, 1951. Salary shown for compensation as officer only.

Mid-Continent Airlines, Inc.

Thomas F. Ryan III, chairman of board, no salary, $500 bonus and indirect compensation; **J. W. Miller,** pres. and dir., $28,700 salary (up $1,933.44), $2,345 bonus and indir.; **John A. Cunningham,** v.p.-oper., $15,600 salary (up $1,500), $627 bonus and indir.; **Hugh W. Coburn,** v.p.-traffic and sales, $13,600 salary (up $1,500.16), $813 bonus and indir.; **C. H. Calhoun,** v.p.-eng. and maint., $13,600 salary (up $1,500.16), $432 bonus and indir.; **W. L. Walker,** treas., $11,400 salary (up $1,500), $373 bonus and indir.; **P. H. Carr,** secy., $6,791 salary (up $1,341), $254 bonus and indir.; **W. D. King,** asst. treas., $6,900 salary (up $550), $127 bonus and indir.; **Mary C. Oliver,** asst. secy., $3,539 salary; **J. C. Collins,** dir., $4,800 salary (down $4,833.20), $904 bonus and indir.

NOTE: Items listed as bonus and indirect compensation represent participation in Employees' Stock Purchase Plan, directors' fees and special services.

Northeast Airlines, Inc.

Paul F. Collins, chairman of board, no salary; **George E. Gardner,** pres. and dir., $24,999.98 salary (up $6,999.98), $5,000 bonus and indir.; **A. A. Lane,** v.p.-oper., $14,400 salary; **R. L. Turner,** v.p.-sales, $12,000 salary (up $4,000), $3,000 bonus and indir.; **Hamilton Heard,** treas., $15,000 salary (up $3,000); **R. H. Herrnstein,** asst. treas., $4,550 salary (down $2,950—resigned May, 1951); **H. E. Foley,** clerk, no salary.

Trans-Pacific Airlines, Ltd.

Ruddy F. Tongg, pres. and dir., $15,125 salary; **David A. Benz,** exec. v.p. and dir., $14,283.37 salary; **H. K. Hee,** v.p. and dir., $8,075 salary; **Archie K. Wong,** secy. and dir., $4,825 salary; **Clarence D. Young,** treas. $7,300 salary; **Harry Bowen,** asst. secy., no salary; **Richard C. Tongg,** v.p. and dir., no salary; **Daniel Ainoa,** v.p. and dir., no salary; **Hung Wai Ching,** v.p. and dir., no salary; **Sai Chow Doo,** v.p. and dir., no salary; **Jacob Y. Ing,** v.p. and dir., no salary; **Katsumi Kometani,** v.p. and dir., no salary; **A. Paul Low,** v.p. and dir., no salary.

Northwest Airlines, Inc.

Croil Hunter, president, gen. mgr. and director, $45,750 salary (up $750); **Malcolm S. Mackay,** asst. to gen. mgr., exec. v.p. and dir., $20,000 salary, $80 dir. fees (term of office began May 1,

1951); **Linus G. Glotzbach,** v.p. and asst. to pres., $18,000 salary (up $937.81); **E. I. Whyatt,** v.p., comptroller and dir., $21,000 salary (up $999.84); **A. E. Floan,** v.p., secy. and dir., $17,750 salary (up $749.84); **K. R. Ferguson,** v.p. oper., $3,667 salary (down $20,333—resigned Feb. 26, 1951); **Frank C. Judd,** v.p. oper., $19,224 salary (up $4,224); **Amos Culbert,** v.p. sales, $18,500 salary (up $3,500); **L. S. Holstad,** treas., $15,750 salary (up $750); **D. J. King,** v.p. Orient, $17,590 salary (up $565.16); **C. L. Stewart,** asst. secy., $6,900 salary (up $376.75); **William J. Eiden,** asst. treas., $11,100 salary (up $300); **A. D. Piepgras,** asst. treas., $12,382 salary (up $503.24—resigned May 28, 1951).

Capital Airlines, Inc.

J. H. Carmichael, pres. and dir., $44,000 salary (up $4,000); **R. G. Lochiel,** v.p., treas. and dir., $28,600 salary (up $2,600); **James W. Austin,** v.p., $26,400 salary (up $2,400); **J. B. Franklin,** v.p., $24,750 salary (up $2,250); **Robert J. Wilson,** v.p. and dir., $21,780 salary (up $1,980); **Hayes Dever,** secy., $17,050 salary (up $1,550); **Charles H. Murchison,** chairman, executive committee and dir., $16,500 salary (up $16,500).

Trans World Airlines, Inc.

R. S. Damon, pres. and dir., $84,999.96 salary (up $833.33), $1,000 dir. fees, $25,838 bonus and indirect compensation; **Warren Lee Pierson,** chm. of board, $64,999.92 salary (up $208.33), $700 dir. fees, $24,635.47 bonus and indir.; **J. A. Collins,** exec. v.p. and dir., $45,625 salary (up $1,041.77), $900 dir. fees, $19,685.68 bonus and indir.; **E. O. Cocke,** v.p.-sales and dir., $28,020.77 salary (up $729.18), $900 dir. fees, $12,494.41 bonus and indir.; **T. K. Taylor,** v.p., $14,937.42 salary, $2,941.61 bonus and indir.; **G. L. Gilmore,** v.p., $14,583.25 salary, $3,199.89 bonus and indir.; **D. W. Harris,** v.p., $15,770.80 salary, $2,976.64 bonus and indir.; **G. H. Clay,** secy., $17,812.34 salary (up $416.56), $6,153.29 bonus and indir.; **M. J. Plodinec,** comptroller, $15,562.50 salary (up $691.67), $3,093.08 bonus and indir.; **E. M. Constable,** treas., $14,937.42 salary (up $1,062.50), $3,269.97 bonus and indir.

NOTE: Collings, Taylor, Gilmore and Harris elected to office October 1, 1951. Indirect compensation includes: (a) amounts applicable to Corporations Retirement Plan for the calendar year 1951, although payments made by Corporation under said plan are not actually allocated for the benefit of any person prior to his retirement; (b) difference between purchase price and market price of stock issued during the year under Employees Stock Purchase Plan; (c) Corporation premiums on aviation accident and group insurance plans.

CAA Trains Japanese

Four to six Japanese inspectors and pilots will undergo a three-month training course in the U. S. at CAA's center in Oklahoma City and the Spartan School of Aeronautics. Sponsored by the Japanese Aviation Board, the students will receive instrument and air transport flight orientation.

People

Robert L. Cummings, Jr.

ADMINISTRATIVE

Robert L. Cummings, Jr., has been named president and chief executive officer of New York Airways, recently awarded helicopter routes in the New York City area. **John L. Senior, Jr.**, who has been president, will continue as board chairman. Cummings has been with ECA in Europe, and was formerly with the Atlantic Division of Pan American World Airways.

Henry G. Riegner has been promoted by Trans World Airlines to the position of director of advertising. **C. A. Finkbeiner** succeeded Riegner as production manager-advertising. **John Keavey**, formerly of the G. M. Basford Advertising Agency, has joined Riegner's staff.

Stephane P. Thouvenot, deputy director general of IATA since December, 1950, has resigned effective April 15 and will return to his home in Paris.

Francis C. Jones, former administrative officer in the U.S. for Philippine Air Lines, has been appointed administrative assistant to the president of Transocean Air Lines.

H. Kiel is now assistant general auditor for Trans-Canada Air Lines with offices in Winnipeg. **S. W. Sadler** has been named auditor at Montreal for the airline.

OPERATIONS-MAINTENANCE

Charles C. Mounts, formerly Ozark Air Lines' station manager at St. Louis, named superintendent of stations, succeeding **Lawrence E. Keil**, deceased.

Managerial posts in United Air Lines' Flight Operations Administration have been awarded to five UAL flight captains: **N. F. Timper** was named assistant to the general manager of flight operations at Denver; **J. E. Sandow** and **H. G. Mayes** were named flight managers, New York; **R. C. Ashley** named flight manager, Seattle-Tacoma; and **S. J. Nelson** named flight manager, San Francisco.

Larry Eberly has been named acting station manager and dispatcher for Braniff Airways at Buenos Aires.

J. S. Martin has been promoted from the position of supervisor at Eastern Air Lines' Detroit station to manager of its Owensboro station.

Robert Galbraith has been appointed an employment representative for American Airlines at Los Angeles.

TRAFFIC & SALES

Robert L. Showler has been appointed sales manager of Colonial Airlines.

Jose L. Proenza named by Pan American as acting passenger sales superintendent, Latin American Division, with headquarters in Miami.

Gordon F. Lloyd has been named to the newly-created post of eastern regional sales representative for Canadian Pacific Airlines. He was succeeded as supervisor of sales and traffic at Montreal by **J. P. Leo Caisse.**

Charles T. Billerman, formerly TWA senior sales rep. in Cincinnati, has been appointed district sales manager of a new district embracing Texas and Arkansas just established in the company's central region. Billerman will make his headquarters in Dallas.

William C. Boudreau has been placed in charge of sales and traffic development for American Airlines in Beverly Hills, Calif.

J. Byron Matschke named director of sales administration for Northwest Airlines. Other new appointments by Northwest included **R. D. Watson**, director-tariffs, schedules and market research, **R. R. Hewitt**, manager of schedules and **J. A. Alrick**, manager of tariffs.

Doran

Clyde D. Doran, district sales manager for United Air Lines at Chicago, has been named chief of the company's Hawaiian sales office, with headquarters in Honolulu. He will assume the post in October. Doran succeeds **H. B. Renwick**, who will resign in October to become executive vice president of the Honolulu Chamber of Commerce.

Luiz Carlos do Amaral has been named station manager for Braniff Airways at Sao Paulo, Brazil. He was formerly transportation agent in charge at Rio de Janeiro.

John J. Smyth and **Seward V. Slagle** have joined Braniff Airways as traffic representatives in New York.

T. C. Pelikan has been named sales training supt. for PAA's Latin American Division, with headquarters in Miami.

Military Agency Discounts Renewed

Special discount tenders approved by CAB through June 30, 1953 with member Josh Lee dissenting.

Agreements of scheduled and non-scheduled airlines providing special discount tenders for military agencies have been approved for another year by the Civil Aeronautics Board. Although Member Josh Lee renewed his dissent of a year ago, the majority found the public interest would not be adversely affected by:

• **Tender of Air Traffic** Conference of American providing a 10% discount from normal first-class fares of scheduled airlines.

• **Tenders of Aircoach** Transport Association and Independent Military Air Transport Association providing (a) 10% cut for non-scheduled airline fares over 4.75c per passenger mile and (b) 5% cut for other non-scheduled fares.

Tenders, which have now been submitted to the Defense Department, are approved by CAB for the period July 1, 1952, through June 30, 1953.

Majority cited the continuance of the national emergency as the basic reason for renewed approval of the discount provisions. During such times, they said, the Department of Defense should be afforded special consideration in the utilization of civil air transport facilities.

Further, the need for large scale expedited transportation of military personnel in the present state of national emergency, the said, results in special circumstances which justify arrangements for discounts to the military agencies.

But Member Lee saw it differently. In my opinion, he said, such provisions are unjustly discriminatory, inconsistent with the objectives of the Civil Aeronautics Act, and economically unsound. Lee pointed out that he adhered to this view a year ago and still does on the belief "that the granting of special discounts to particular Government agencies, to special groups, and to favored individuals is discriminatory and is contrary to the public interest."

Last year, Lee was joined by Member Chan Gurney in his dissent and there were indications then that the discount practice might not survive another year. Their main concern appeared to be with the possibility of a spread of the discount practice to other government agencies.

This year, however, Gurney joined the majority in approving the proposals and indications are that, at the least, the duration of Board approval will match that of the national emergency.

Decentralization Gets Assist from Local

Central Airlines, bidding for renewal of its local-service airline certificate before CAB, has emphasized for the first time the important role of the area-type carrier in the country's decentralization program, both as related to national defense and to the economic and social development of smaller communities.

Generally, national-defense value of local-service airlines has been appraised from an available airlift standpoint and with a view to the reservoir of trained personnel which the lines maintain.

Central, however, in addition to an airlift record in which over 16,000 military personnel have been transported 13½ million passenger miles, points out that critical industrial plants, which ordinarily would be concentrated in large cities, are settling in smaller communities largely because of the availability of Central's air service.

Typical was the decision of Sylvania Electric Products Co. to establish a new plant in Shawnee, Oklahoma, rather than in the more densely populated and industrialized areas of Oklahoma City and Tulsa. At public hearings before CAB, a witness for Sylvania testified that Central's service to Shawnee "was a very determining factor" in locating at that point because of a day-to-day need for air shipments of vital raw materials.

Another example is the Janco Aircraft Corp. plant in Shawnee, which is engaged in extensive sub-contract work for prime Air Force and Navy contractors, such as Lockheed, Boeing, Consolidated, and Temco. A Janco official testified before CAB that in their contract with Shawnee to locate there, commercial airline service was a "must."

Non-Subsidy Mail Rate Proposed for Braniff

A non-subsidy mail rate of 53c per ton-mile has been proposed for domestic operations of Braniff Airways by CAB. Rate would be retroactive to October 1, 1951, and is expected to produce total of $911,000 in mail pay annually.

Currently, the "Big Four," Capital, National, and Delta operate under non-subsidy rates, according to CAB's administrative separation of subsidy and service mail pay. The "Big Four," known as Group I carriers, are paid 45c per ton-mile. Capital, National, Delta, and Braniff, Group II carriers, are or will be paid the 53c rate. The Group II rate has also been proposed for Western. Thus, less than half of the domestic trunk-line industry is still considered in the subsidy class.

Decisions

• **Cuba Aeropostal,** S. A., holder of a CAA permit for non-common-carrier operations between Florida and Cuba, ordered investigated for possible unauthorized common-carrier operations between points in other areas, including New York-Havana services.

• **Robin Airlines** directed to show cause why its letter of registration should not be revoked for alleged unauthorized transfer of control of the airline from Norman D. Kessler to G. Harry Batchelor.

• **Pan American World Airways** practices in connection with free and reduced-rate transportation ordered investigated to determine if such transportation has been furnished to unauthorized persons.

• **Northeast Airlines** granted exemption to inaugurate seasonal service to Bar Harbor, Me., and Berlin and Laconia, N. H., on May 28, 1952, in lieu of June 1, starting data named in certificate.

• **Riddle Aviation Company** granted exemption for six months to transport shipments of flowers from West Palm Beach, Fort Pierce, Palatka and Jacksonville, Fla. to New York.

CAB CALENDAR

April 15—Hearing in New England-Southern States Merger Case. Washington. Docket 5124 et al.

April 15—Hearing in North Atlantic Tourist Commission Case. Washington. Docket 5422.

April 29—Hearing in Lake Central Airlines Management Investigation (Reopened Indiana-Ohio Local Service Case). Indianapolis. Docket 4034 et al.

April 29—Hearing in Caribbean Atlantic Certificate Renewal Case (Ciudad Trujillo-San Juan route). Washington. Docket 4979.

May 26—Hearing in Southern Airways Certificate Renewal Case. Washington. Docket 5199.

June 2—Hearing in Capital-North-West Merger Case. Washington. Docket 5396.

Are Preferential Runways the Answer?

CAA issues new directive; conflicting opinions aired at annual Airport Operators Council meeting.

By Richard Fuller

CAA's preferential runway plan (American Aviation, March 31), anticipated in recent weeks by the industry and recently made public, calls for the program to be put into effect where CAA operates a control tower and where it is necessary to eliminate or lessen noise and/or hazards to persons on the ground. This ruling is outlined in a circular letter from Administrator Charles F. Horne to the regional administrators, in which it is emphasized that the procedures proposed are intended only for locations where a need exists.

Procedures

The plan asks the establishment of an "order of preference" of runways, starting with the runway permitting flight over least-populated areas and progressing to the runway over the most settled areas. The letter says that in some cases it will be necessary to establish one order of priority for landings and another for takeoffs. Purpose of the use of the "preferred" runway is to increase safety on the ground and to diminish noise nuisance by less frequent flight over congested areas. This will also allow greater possibility of a reasonably safe landing in the event of emergency, according to the CAA.

Whether CAA's procedures will be adopted at a particular airport will be decided by coordinated action of the Air Transport Association or air carrier company representatives, local Air Line Pilots Association council, and other local users, as well as the CAA and airport management.

An operations letter is to be drawn up for use of control towers which will set up preferential-runway-use procedures based on the following principles:

- **Procedures apply** in VFR weather only.
- **Pilot retains** full authority. He may request another runway when he thinks the preferential runway is not suitable.
- **With wind velocities** of less than 15 mph, tower will select the runway having the highest priority in the appropriate order of preference, but with a cross wind not exceeding 80 degrees to the right or left of the nose of the aircraft. (This supersedes the use of a "calm wind" runway at locations where the preferential runway system is established.)
- **At higher wind** velocities, runways should be assigned as dictated by wind direction.
- **In all cases,** wind direction and velocity will be stated.

The circular letter states that regulations of the CAA Administrator and the ANC Manual, both of which specify that aircraft shall ordinarily be authorized to use a runway most nearly aligned into the wind when the surface wind is six miles per hour or more, may be deviated from to the extent required by the new procedures. CAA indicates that formal amendment of the earlier regulation will be made in the near future.

The letter notes that the practicability of preferential runway programs may vary between locations and that the situation may be complicated by different operating characteristics of various aircraft, but CAA's regions are requested to give the procedures "careful attention and study." Considerable latitude will be granted by the Administrator, the letter states, in reaching agreement between airport management, operators, and pilot organizations. Regional administrators are expected to render "unstinted cooperation and assistance" to airport management and others concerned in the program, the letter states.

Meanwhile, at the Airport Operators Council conference in Los Angeles, the preferential runway idea was the growing issue.

Opinions

Closely related to the local public relations problem, aggravated of late by the New Jersey accidents and the current rash of noise complaints, the preferential runway faced the airport operators wherever they turned. Unless there's a sudden shift in the winds of controversy, the preferential runway appears to be in a fair way to becoming the issue of the year among operators of airports.

- **Adm. J. W. Reeves,** general manager of the Los Angeles Department of Airports, for example, indicated that as soon as the Los Angeles International Airport runways are completed to 8,500 feet, preferential use of the CAA's permitted downwind component of 5 mph will be urged to make it possible for almost 100% of takeoffs to be made over the ocean.

Dissent

- **On the other hand, Fred Glass,** director of airport development for the Port of New York Authority, declared that the inevitable result of preferential runways at LaGuardia Field would be the cancellation of countless trips.
- **In a paper on aircraft safety,** Jerome Lederer, director of the Flight Safety Foundation of the Cornell-Guggenheim Aviation Safety Center, declared the use of preferential runways to reduce operations over congested areas should become standard operating procedure. Going a step further, he suggested that the use of one runway for all operations regardless of wind direction might be desirable because it would limit the area in which the populace is exposed to noise and falling aircraft.
- **Joe Marriott, CAA 6th Region** administrator, making the concluding talk of the conference, warned the airport operators that their preferential runways might be their last reserve and urged them to make sure they were properly safeguarded by zoning regulations or some similar protection in the approach zones.

Doolittle Group Unqualified?

NOT A SINGLE MEMBER of the President's airport commission headed by Lt. Gen. James H. Doolittle is qualified to pass on airport problems, according to Louis Inwood, president of the Airport Operators Council.

Speaking before the American Association of Airport Executives at Ft. Worth, Tex., he cast doubts on the effectiveness of the Doolittle commission, urging that it should consult with airport groups before making its recommendations. Inwood is the first to raise a critical voice on the subject. He strongly implied he feels nothing practical will result from the commission's present survey.

At the meeting, Inwood also began a drive for restoring CAA as an independent agency. He blamed the Department of Commerce for choking off airport funds for the next fiscal year.

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Arresting Gear Seen Key to Jet Landings

Airport operators cheered by Douglas estimates on runway lengths, landing speeds, tire pressures.

By Fred S. Hunter

STRONG hints that arresting gear of one type or another will become standard equipment at airports where jet transports operate were made to the Airport Operators Council at its fifth annual conference at the Hollywood Roosevelt Hotel in Los Angeles.

E. F. Burton, chief engineer of the Santa Monica division of Douglas Aircraft Co., in a question and answer period indicated his company is at work on a gear which would be installed approximately three fourths of the way down the runway to act as a safeguard when runways are icy or slippery.

Burton

Arresting gear, Burton added, represented the only means of insuring a positive stop for a jet transport.

Perhaps Barriers

Jerome Lederer, director of the Flight Safety Foundation of the Cornell-Guggenheim Aviation Safety Center, also told the operators that barriers may be the answer for jets that overshoot. Lederer said the arresting gear installed on the 6,600-foot runway at the Grumman airport had been credited with saving several airplanes. The installation, which cost about $25,000, involves use of a hook. He admitted the weight of a hook would draw objections.

Members of the Council were relieved when Burton told them that psi problems would not be greatly aggravated by the advent of jet transports.

Tire pressures will go somewhat higher, he said, but there is no danger they will be increased to the degree they have been advanced on high-performance combat airplanes. "A transport must be economical, so we cannot have tires only good for a few landings," Burton said.

Moreover, he said the Douglas Santa Monica division understood that its jet transport would have to be designed for operation on runways well under 10,000 feet or it wouldn't sell any airplanes.

He said his own personal thinking on takeoff lengths for a jet transport would be 5,500 feet on a standard day, 7,000 feet on a hot day.

The operators received these comments with gratified surprise, since they were in almost direct contradiction to what they had expected to hear, in the light of the recent presentations on runway lengths made in Los Angeles in connection with Howard Hughes' efforts to provide for extension of both the Los Angeles International Airport and his own at Culver City up to 15,000 feet.

Continuing, Burton estimated 100 mph as the landing speed of a jet transport and 125 mph as the approach speed. Afterburners, he said, were not being seriously considered for domestic operation, but a partial afterburner would have to be taken into consideration for overwater flights.

The Douglas engineer said he did not see any limitation on the range of a jet transport. Unless a domestic jet transport can be developed for economical operation over the three range variables typified by New York-Chicago, New York-Miami, and Chicago-San Francisco it wouldn't be a good investment for a manufacturer to put $50,000,000 into the airplane, Burton said.

OFFICERS AND DIRECTORS of Airport Operators Council for 1952 are shown above. Back row, left to right: Leander I. Shelly, general counsel; C. C. Thompson, executive secretary; A. B. Curry, director; George Treadwell, director; Fred M. Glass, director. Front row, usual order: Adm. J. W. Reeves, Jr., first vice president; Louis R. Inwood president; G. D. Albrecht, second vice president.

What Airports Want From Government

TOP problems in relations with the Federal Government were reflected in three of the resolutions passed by the Airport Operators Council at its fifth annual conference.

Operators of the nation's high-traffic-density airports:

• **Urged Congress to amend** the surplus airports act to limit the right of recapture to the property actually surplus, and also to provide for termination of the recapture right after depreciation of the U. S. investment.

• **Urged Congress to restore** annual appropriations for matching funds on which the cities had counted in authorizing bond issues for airport expansion and improvements.

• **Urged that heavy-traffic airports** be developed for civil use, including logistic support in the national defense, with military traffic held to a minimum.

New AOC officers elected at the conference are pictured above.

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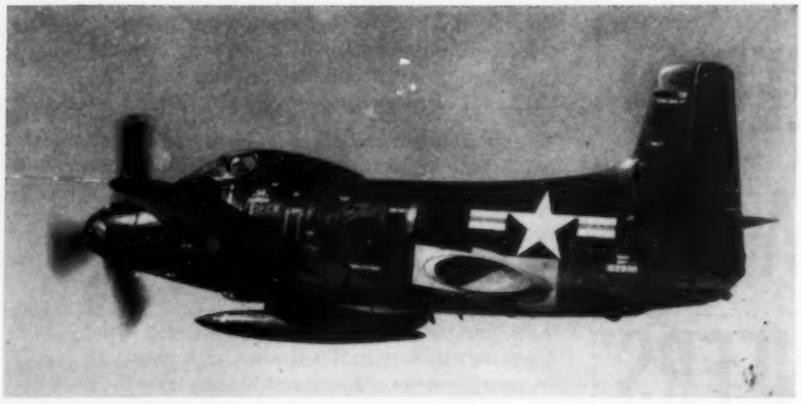

FIRST flight shot of Douglas A2D first turboprop bomber headed for early production.

New F-86F Sabrejet Off Production Line

First of the new North American Sabrejets, the F-86F powered by a more than 5,800-pound-thrust, J-47-GE27 engine, has rolled off the assembly line and been delivered to the USAF at Los Angeles, but probably will not make its appearance in Korea for several months.

The F, which is to be produced at both Los Angeles and Columbus, officially has a combat radius "in excess of 600 miles," a maximum service ceiling of "over 45,000 feet," and flies at "more than 650 mph" at sea level. The North American-designed "flying tail" is incorporated in the newest Sabre.

Chase to Move Near K-F Facility

Chase Aircraft Co., whose C-123B cargo transport is to be built at the Kaiser-Frazer plant, Willow Run, Mich., has decided to transfer operations from West Trenton, N. J., to a new factory a mile away from the K-F facility.

Transfer of machinery and personnel will not begin for several months and West Trenton activities will phase out gradually as they are transferred. K-F owns 49% of Chase stock.

Chase's new plant will have more than 250,000 square feet as against the 160,000 square feet it is now leasing from Mercer County, N. J. The present Jersey facility is Navy-owned, and part of it is to be used in connection with a jet-engine testing lab. Only 95,000 square feet would have been available for Chase activities.

Four WSB Labor Disputes End

All four aircraft labor disputes which ended up in the lap of the Wage Stabilization Board have now been successfully concluded. Two contracts were signed on the basis of WSB recommendation, the Wright Aeronautical-UAW and Douglas-Long Beach-UAW "recessed" strikes.

The other pacts were signed between Ryan Aeronautical and the UAW, and between Boeing-Wichita and the IAM-AFL after collective bargaining. The panel set up to hear the Ryan case never operated, because of the agreement. In the Boeing case, the WSB panel did conclude hearings and made recommendations to the parties concerned.

Although contracts have been signed and retroactive wages in all four cases either have been paid or will be distributed soon, one issue is still unresolved and remains subject to negotiation in the three cases where it was originally a point in dispute. UAW is still arguing for a union shop at Ryan and Douglas, and the IAM will continue to press for the same point at Boeing. Wright granted a union shop in an earlier contract.

Incidentally, UAW vice president, John W. Livingston, head of the union's aircraft department, has resigned from the WSB because of his newly assigned duties as chief of the UAW's General Motors department. At the moment, therefore, the 18-man board has no representatives of either aviation management or labor.

Skilled Labor Supply Better, But Still Tight

Bureau of Employment Security has reported to Secretary of Labor Maurice J. Tobin that a heavy demand still exists for engineers, machinists, draftsmen, tool makers, and workers in a number of other key occupations needed in the defense program, although the volume of local occupational shortages has declined moderately in recent months.

As of February 6, local state employment offices reported unfilled job openings for 4,685 engineers, 3,062 draftsmen, 3,574 stenographers and typists, 3,794 machinists, 1,941 tool makers, die sinkers and setters, and 3,029 workers with machine-shop and allied skills.

Widespread shortages of engineers and skilled craftsmen have been reported by aircraft and aircraft parts, machine tool, and ordnance industries.

Bureau Director Robert C. Goodwin suggests that any employer who cannot find the workers he needs in the community where his plant is located can get workers in other parts of the country through the labor clearance system for out-of-area recruitment of workers operated by the U. S. Employment Service and affiliated state employment services.

Ryan-California Metal Merge Ceramic Works

Ryan Aeronautical Co. and California Metal Enameling Co. have merged their ceramic coating activities and will jointly finance a continuing program of research toward improved coatings, now being used for high temperature aircraft engine applications. An improved ceramic for this use—A-418-Ryanco-C—was also announced.

Ryan-Cameo coatings are being used on the engine exhaust systems of all Boeing Stratocruisers and Convair 240's. Test orders for United Air Lines' DC-6's, Pratt & Whitney 3,500-hp R-4360, and various jet engine applications are underway.

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Letters

(Continued from page 7)

left itself open to criticism. Actually there are five Region 5 men among those picked for the new jobs, but there are also five from the 6th region, or 17.3%. There were three from Region 2 (10.3%), two from Region 7 (7%), and one each from Regions 1, 4, 8, and 10. Another nine (31%) were in Washington.

● *The primary new jobs involve administering the work of the over-all Aviation Safety organization in the field, which admittedly was badly handled before. Since only agents in the GS-13 ratings and above were considered, it was concluded that they had proper technical backgrounds and the tests concentrated on administrative procedures.*

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Helene ("Teddy") Spytek
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A. C. ("Al") Hurlbut
Fairchild E & A
at WINGS CLUB, New York, N. Y.
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Katherine ("Kay") Liddy
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Frank E. Williams
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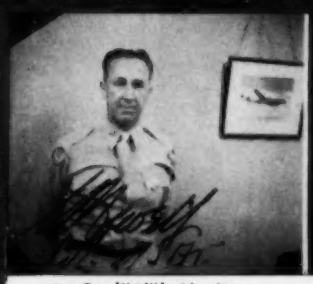

A. G. ("Al") Hewitt
U. S. Air Force
at Wood-Ridge, N. J.
June 14, 1948

John W. Riggs
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U. S. Air Force
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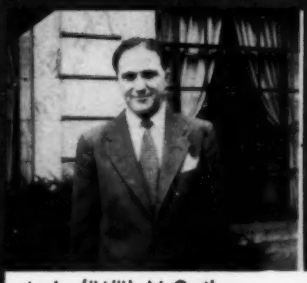
June 14, 1948

H. G. ("Bus") Felio
Marine Aircraft Co.
at WINGS CLUB, New York, N. Y.
June 21, 1948



A. L. ("Al") McCarthy
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U. S. Air Force
Washington, D. C.
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Curtis-Wright Corp.
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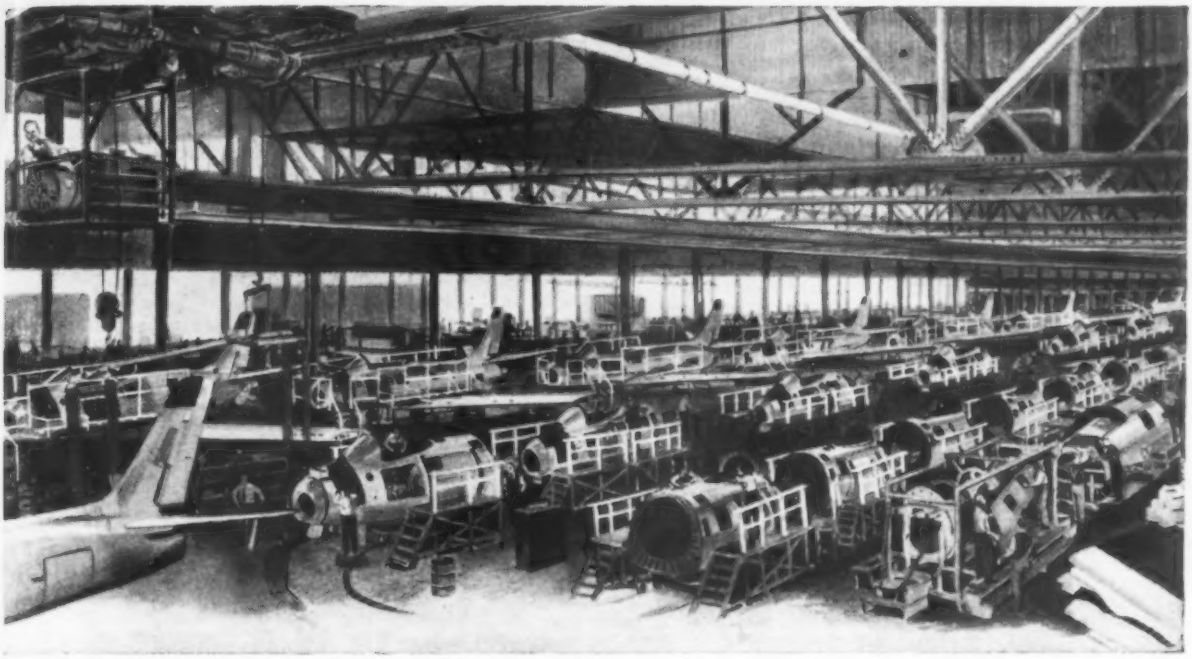

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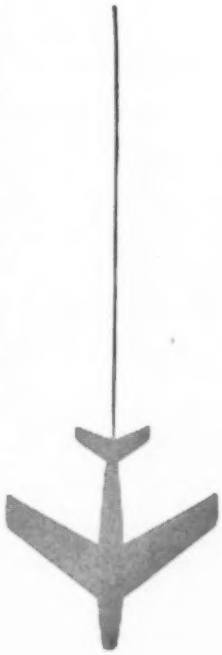

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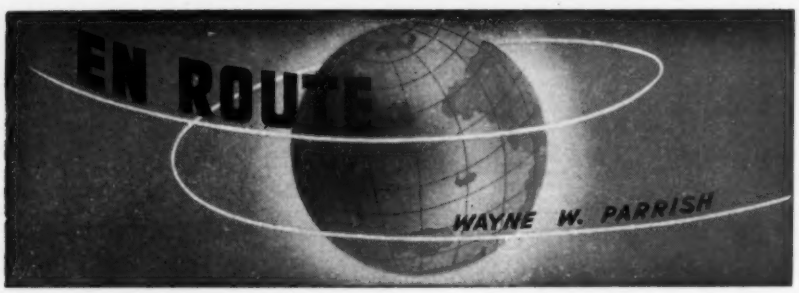

Four Days to DCA. As I said last issue, I can get into a peck of trouble in pursuit of my goal of hitting every airport in the country served by a scheduled carrier. In addition to that it takes a lot of time hedge-hopping in those DC-3's.

Late in February, I decided to return to Washington from Los Angeles via 30 new airports I'd never been on before. The trip was to take four days. As it turned out I got to make only about 20 new ones due to what happened in El Paso.

I started back via the San Joaquin valley route of United Air Lines—Bakersfield, Visalia, Fresno, Merced, Modesto, Stockton, Oakland, and San Francisco. A 400-mile flight in an elapsed time of four hours and 50 minutes!

Somebody ought to get United people to fly on some of the truly local-service lines such as Frontier, and Pioneer, and Southwest. The elapsed time on this United local route amounted to 72½ miles per hour. At every single stop both engines were cut off. Once we waited 15 minutes on the ground for scheduled departure time. I would say that a good 50 minutes could have been cut from the flight time by following the routine of the feeder boys.

Slow Breakfast. Even on a local flight like this, United serves its usual deluxe breakfast and frankly I think it's a little too elaborate for a short-hop route which averages about 50 miles between stops. I was in a front seat and the stewardess got around to serving those of us up front just after we had gone over the Tehachapi mountains and of course it got very choppy and the coffee spilled. We still had our trays when we landed at Bakersfield.

Stewardess Haworth had such lovely dark eyes that I couldn't complain but somebody ought to tell her (gently, of course) that breakfast should be speeded up while the flight is smooth—and it could have been. Smaller breakfasts, faster service, that's the idea for local routes. But despite the almost five hours en route, **Capt. J. L. Jordan** took me into a new part of the country and six new airports, so I was happy.

After seeing **Warren Burke** and **Rem Thigpen** of United at San Francisco, and having lunch with **Clarence Young** of PAA, and dinner with **Jack Connelly, Harry White** and **Ted Mitchell** of Southwest, I hopped over to Reno on United to transfer to Bonanza. This was my first trip on what they call "Banana Airlines" out west. And six more new airports (Hawthorne, Carson City, Tonapah, Kingman, and Prescott—and Reno, which, by some odd chance, I had never landed on before).

Nevada Gambling. **Mike Cole** who runs traffic and sales for Bonanza met me at Las Vegas and I spent the evening with him and **Ed Converse,** the president; **Ken Frogley,** ex-American Airlines who now toots Las Vegas for the Chamber of Commerce; and **Vernon Willis,** ex-Western, who runs his own travel agency. I was put up in a $35 per day suite at the fabulous Flamingo Hotel, which has a gambling casino between the lobby and dining room so you can't miss it. Quite a joint.

I dropped only one buck in those vicious one-armed bandits and stayed away from roulette and other games and I must say I get a revulsion in my belly when I see respectable-looking middle-class Americans throwing away fives, tens, twenties, fifties and on up on gambling. Such suckers. With all due apologies to **Ken Frogley** who is promoting the place, Las Vegas is, to me, a symbol of decadence in a country that was built up by hard work, savings, investments and public spirit. I associate gambling with outgo and not income. I guess I've seen too much in Latin America where people gamble fortunes but are too cheap to give a buck to charity, or repair sidewalks, or improve their towns or the lot of other people. Las Vegas won't like this but I can't help it. The "take" in gambling in Nevada could do a lot to reduce our public debts. A nation's welfare is built on production, not syphoning off incomes into a rat hole.

✦ ✦ ✦

Up and Down. Well, anyway, I liked Bonanza's service. The stewardesses are good and anxious to please. Traffic on the Reno-Las Vegas segment hasn't been too good, but business between Las Vegas and Phoenix is excellent. The flying I experienced on the two segments was very good. Bonanza has a scenic route, kinda rough during hot-weather days, but a thrill to easterners who have never seen the weird colors of those barren mountains before.

At Phoenix I transferred to Frontier for El Paso via such places as Safford, Clifton, Silver City, Lordsburg, Deming, and Las Cruces—more new stops—and believe me it can get rough in a DC-3 out in that area. But it seems to be a useful service to those somewhat isolated communities which are important in the mining world, and hence to the national economy.

At El Paso, I ran into trouble but didn't realize it until later. I was to take American to Midland-Odessa, then Pioneer to Amarillo, and stay all night there, and leave on a 5:31 a.m. flight of Central Airlines to Tulsa. I checked in with AA. I was told my baggage which was checked through all the way from Las Vegas to Midland-Odessa, would be transferred okey.

El Paso. I had late lunch at the Skychef Cafe and for once, and about the first time, the service was prompt. I had always considered El Paso on a par with Albuquerque as one of the most picturesque airports to drop into. But I must say that **Charlie Moore** had better get busy and clean things up. The paid toilets were a disgrace. Too many pinball machines, too prominently displayed. An unattractive concession selling Mexican stuff. The terminal is getting a run-down appearance.

I got on American without a second thought about my baggage and arrived at Midland-Odessa with a half-hour for transfer to Pioneer. But my bags didn't come off the plane. I snagged a Mr. Logan of AA and showed him my baggage stubs and he ran out and held the airplane until he could check every compartment. No bags.

✦ ✦ ✦

Where's My Bags? I hit the roof. In almost 600,000 miles of flying I've never had a bag lost. When people have told me about losing bags I've said to myself that it was probably their fault in the first place. I have been proud of my record. Well, the bags weren't there, so Logan got **Woody Campbell,** the live-wire station manager, and he called El Paso but no bags were found. But within a half hour a teletype came saying the bags were found on Continental's baggage cart and would be sent over later in the evening on CAL.

Meantime, I was burned up because I had to cancel my trip to Amarillo and over to Tulsa on Central. I wouldn't budge without my bags. Woody Campbell couldn't have been nicer and found me a room in the Elliott Hotel at Odessa and I must say that here is a real hotel. If you leave an early call, they waken you on time and within two minutes a boy is knocking on the door with hot coffee and the morning paper. Remember that hotel, friends, it's the Elliott in Odessa, Texas. (P. S.—My bags reached me late that night at the hotel).

Quite a Ruckus. So—I stayed overnight, took Pioneer's local into Dallas, had lunch with **Chuck Beard, Walt Henshel, Rex Brack** and **Claude Adams** of Braniff, chatted at the airport with **Bill Long, Bob Smith,** and **Harding Lawrence** of Pioneer, and hopped on an American nonstop to Washington, four days out of Los Angeles but minus 10 new local airports in Oklahoma and Missouri I wanted to see.

But here's the payoff. In Dallas I needled **M. D. ("Doc") Miller** of AA about my lost bags and told him about the dirty toilets at El Paso. In due course, it seems, Miller's men needled Charlie Moore about my complaint. So now Charlie Moore has given American hell for losing Parrish's bags. I'm getting the carbon copies of the letters. Look fellas, let's forget the whole thing. Stop losing bags and clean up the airport and I'll be happy.

Around the World

TRANSPORT

Lord Douglas of Kirtleside, chairman of British European Airways, is visiting the U.S. to see what manufacturers have or expect to have in the way of a large twin-engine helicopter which BEA might use on routes in the British Isles and between London and such points as Paris and Brussels. He will return to London on April 27.

Following a threat by privately-owned Australian National Airways to go out of business unless it is merged with government-owned Trans-Australia Airlines, the Australian government has made a proposal under which it would offer ANA part of the government business on which TAA now has a monopoly, and an offer to buy modern transports for charter to both lines. Government believes ANA and TAA should survive as separate companies, and that a basis can be found for fair competition.

California Eastern Airways has signed 10-year contract with Osaka Shosen Kaisha, Japanese steamship company, under which Cal Eastern will furnish all necessary planes, equipment, and communications facilities and provide maintenance, dispatch, and technical services and personnel at various terminals for Japan International World Airlines (Around the World, March 31). OSK is principal organizer of JIWA, which plans operations from Japan to U.S. and South America.

British Overseas Airways Corp. has received three de Havilland jet Comets and is scheduled to take delivery on a fourth in mid-April. Carrier needs minimum of four to start scheduled jet service London-Johannesburg in early May.

East African Airways has ordered eight Italian-built Macchi M.B. 320 feederliners for use in Tanganyika, Kenya, and Uganda. Plane, carrying a pilot and five passengers, is powered by two 185-hp. Continental E185 engines. Range is 620 miles at 160 mph.

Three British Marathon four-engine transports have been ordered from Handley Page Ltd. by Union of Burma Airways for use on routes to India, Thailand, and Malaya.

SABENA Belgian Airlines is still planning to buy at least two jet transports for Brussels-Leopoldville-Johannesburg service. Plans were not affected by recent increase from six to eight in DC-6B order.

A South African company has bought Swissair's two Douglas DC-2's.

Transportes Aereos de Salvador, small Brazilian carrier, has ordered the de Havilland Heron for local-service operations in the state of Bahia.

Trans-Canada Air Lines reported overall surplus of $3,890,957 for North American and overseas services in 1951. North American profit was $3,843,726 against $201,206 in 1950; surplus on overseas services was $47,231 against 1950 deficit of $1,526,412.

Scandinavian Airlines System had 1951 fiscal year net profit of $347,000, with revenues of $3.5 million. SAS carried 481,697 passengers, 16.9 million pounds of freight, and 5,170,000 pounds of mail.

Ethiopian Air Lines performed 16,099,506-revenue passenger-miles in 1951, a 61% increase over the 9,782,022 flown in 1950.

Iberia, Spanish airline, has increased one-way fares 10%, the first fare boost since 1945.

Dr. Kurt Weigelt, former member of the board of Deutsche Lufthansa, is chairman of a technical committee established by the Federal German government to plan creation of a German airline company.

New president of Australian Air Pilots Association is Capt. R. G. P. Andrews, senior pilot of Trans-Australia Airlines.

Iberia on April 20 will start weekly Madrid-Barcelona-Frankfurt DC-4 service to be operated in pool with KLM and SAS.

•

MANUFACTURING

Casa 202 Halcon twin-engine transport, a Spanish development, has completed taxi trials and will be flight-tested shortly.

A SO 1310 convertiplane carrying a pilot and four passengers is being built in France by SNCASO to gain experience for developing a 20-passenger convertiplane with 186-mph. cruising speed and 300-mile operating range.

A 750-hp. nine-cylinder radial engine is being developed by Empresa Nacional de Motores d'Aviacion, Barcelona aircraft engine manufacturer formerly known as Elizalde.

Extension in overhaul life of Gipsy Queen 70-4 engine from 600 to 800 hours has been approved by British Air Registration Board. About 1,300 of the engines are in service.

Breguet, private French firm, and nationalized SNCAN have agreed to pool construction facilities should either win a government contract to build a transport plane for operation on French Union routes. Each will proceed independently with its own design.

French aircraft industry is now employing 36,000 workers, including 24,000 on airframes and 12,000 on engines.

JATO rockets are to be manufactured in Sardinia by Compagnia Generale Italjet, which has been formed by Aerojet Engineering Corp., Whitehead-Moto Fides (Fiat subsidiary), and Polverific Stacchini, of Rome.

SNCA du Sud-Est, of France, has ordered a Sikorsky S-55 to be used in demonstrations to determine its sales potential. Company will manufacture the helicopter under license, in cooperation with SNCASO and Breguet.

Production of an "entirely new type of fighter developed abroad" is planned in The Netherlands. Speculation is that it may be France's swept-wing Dassault MD 452 Mystere.

News At Deadline

Airport Groups Frown On Any Major Changes

Three airport groups have told President Truman's temporary airport commission, headed by Lt. Gen. James H. Doolittle, that it is impractical to relocate civil airports or to make any major change in existing airport configurations. They do recommend, however, the promulgation of a standard of maximum noise level for all civil aircraft types, a maximum standard for the loading of tire pressures per square inch, and maximum lengths of aircraft landing and take-off requirements.

The three groups are the Airport Operators Council, American Association of Airport Executives, and Airports Advisory Committee. The organizations concede that airports present problems of annoyance and hazard to citizens living in close proximity, but say that these are social problems calling for better relationships between the community and airport operators.

Martin Refinancing OK'd

Proposed refinancing plan of The Glenn L. Martin Co. has been okayed by the company's stockholders. Among items approved was a proposal to increase outstanding common stock from 1,500,000 to 3,000,000 shares, and a plan to give voting privileges to holders of convertible notes. Holders are the so-called Financing Group, consisting of 19 investors who will provide $6 million in additional capital through purchase of the notes which are convertible to common after seven months.

Colonial Stockholder Group Asks EAL Merger

A committee of Colonial Airlines' stockholders is soliciting proxies favoring a merger of the company with Eastern Air Lines, as opposed to the management-backed plan to merge with National Airlines.

Showdown is expected at the annual Colonial stockholders' meeting this Wednesday, April 16.

The opposition group, which favors the EAL deal plus election of a new slate of Colonial directors, is headed by T. Peter Ansberry, an attorney. It claims that it represents or has pledged to it 110,000 of the 515,600 outstanding shares of Colonial as of December 31, 1951. Reports have linked the name of Sigmund Janas, Sr., former Colonial president, with the opposition group, Janas, who has said that he supports an EAL-Colonial merger, owns 40,000 shares and holds an option for 80,000 additional.

In response to a query, Capt. E. V. Rickenbacker, EAL president, wired the group that the EAL offer still stands.

Landa, Law Firm Sued by Former Colonial Official

Alfred M. Hudson, former vice president of Colonial Airlines, has filed suit in New York State Supreme Court asking "repayment" to the airline of over $120,000 by Alfons B. Landa, former president, and his Washington law firm. He also asked that Colonial be enjoined from continuing to retain Landa or the firm, Davis, Richberg, Tydings, Beebe and Landa.

Hudson asked return of $32,741 which he alleged the law firm collected from Colonial in 1950 and early 1951 and which he claimed exceeded the "reasonable value of proper legal services." Repayment of a minimum of $29,025 was asked, stemming from alleged agreement of the firm to process two route applications for a monthly payment plus stock options for Landa. He alleged that the lawyer defendants "contemplated securing said routes . . . by use of influence . . ."

He requested return of all amounts over $500 per month paid to the firm after Landa became Colonial's president; return of $1,500 for a "junket" to the travel agent's convention in Paris by a member of the executive committee and the secretary of the airline; return of part of the $1,000 monthly fee paid Benjamin Sonnenberg as public relations counsel, and return of $60,000 stemming from Landa's appointment of D. A. Duff as executive vice president. Duff and assistants, he alleged, cost $20,000 in salaries and expenses and were "of no value." In addition, Duff's handling of a pilot contract cost $40,000 in excess of what the union's bargaining agent "was willing to recommend and which the pilots and co-pilots were willing to accept," he claimed.

Phoebe Omlie Blasts CAA Policies, Resigns

With one of the most critical blasts leveled at CAA in recent years, Phoebe F. Omlie has resigned her position in CAA's Office of Aviation Development because she "can no longer willingly sit by and watch the Truman administration socialize civil aviation in the United States."

The present trend in CAA policy committees "can lead only to the liquidation of America's aviation industry, forcing it into government ownership," said Miss Omlie, holder of the first pilot's and mechanic's licenses issued to a woman by the Commerce Dept.

"For some time now I have sat in planning discussions controlled mostly by bureaucrats who have had no actual experience in civil aviation, and watched them agree to regulations and taxing policies that must eventually force civil aviation to the wall."

She is particularly critical of U. S. agreement, through the Air Coordinating Committee, to recommendation of the International Civil Aviation Organization that all aircraft be converted so that computations can be made in nautical rather than statute miles. The conversion will involve expensive equipment changes.

She implied that the best interests of U. S. civil aviation, which represents 95% of world civil aviation, were being undermined by international agreements in which the U. S. has an ineffective voice.

Capital Super DC-3's May Go to U. S. Steel

Capital Airlines is reported to be selling its three Douglas Super DC-3's to U. S. Steel Corp. Under consideration is a deal under which Capital would furnish crews and do maintenance work on the planes for U. S. Steel. Reason for the sale is said to be Capital's desire to reduce its number of plane types in view of possible merger with NWA.

Temco Name Change

Texas Engineering and Manufacturing Co.'s stockholders have voted to change the company's name to Temco Aircraft Corp. and to increase authorized capital stock from 895,760 to 1,300,000 shares.

UAL To Up Family Fares

United Air Lines has filed a tariff with CAB proposing an increase in fares for family-plan travel. The tariff, effective May 1, would boost fares for those traveling with the full-fare-paying head of the family from 50% to 75% of normal fare.

Bendix Products Division

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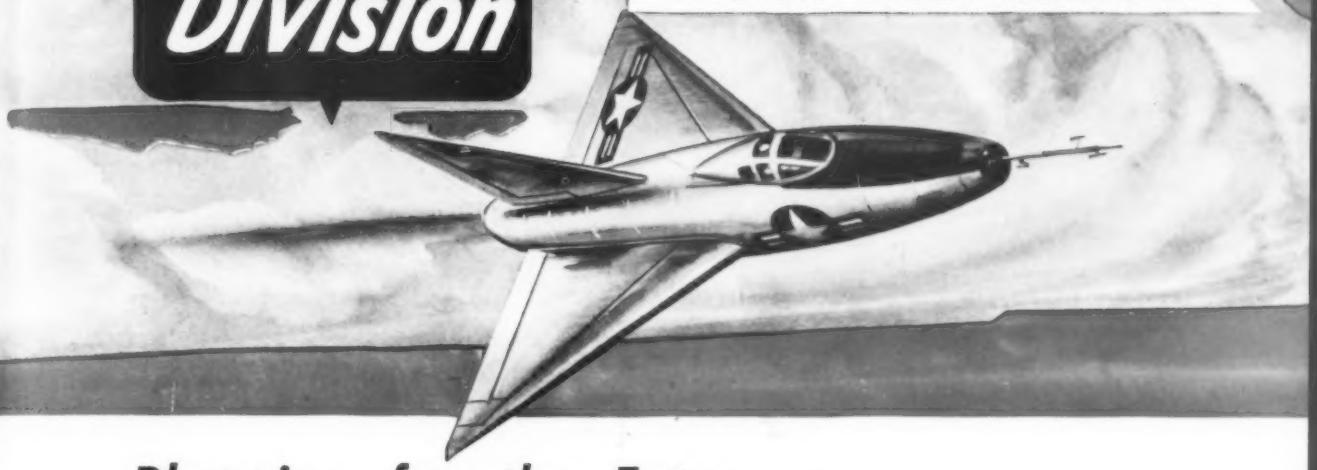

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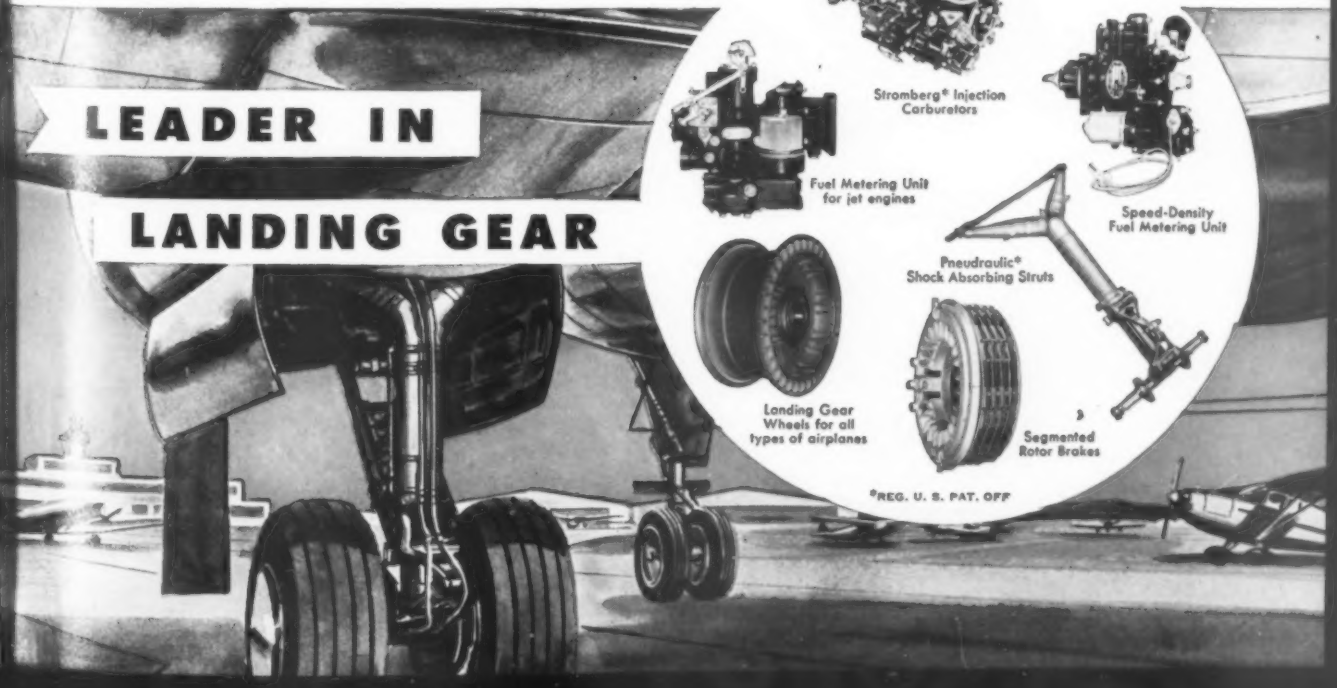

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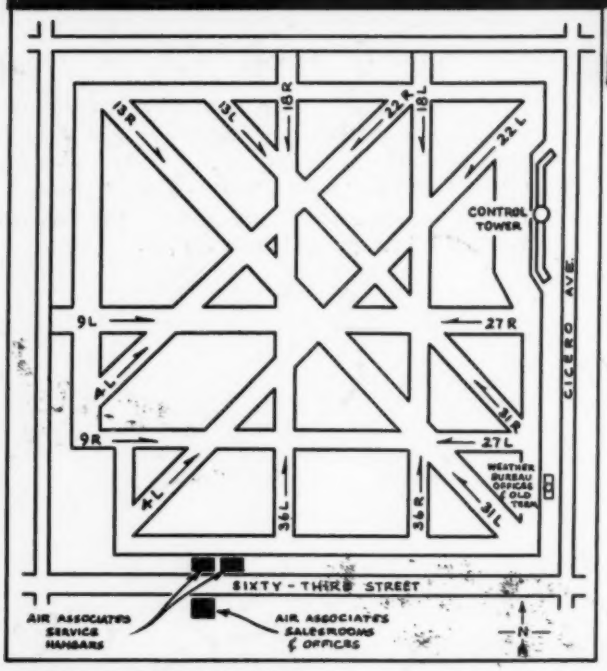

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